THE

Journal of the American Medical Association.

EDITED UNDER THE DIRECTION OF THE BOARD OF TRUSTEES.

PUBLISHED WEEKLY.

VOL. XII. CHICAGO, FEBRUARY 23, 1889. No. 8.

ORIGINAL ARTICLES.

A CASE OF REFLEX VALGUS.

Read before the American Orthopedic Association, at Washington, September, 1888.

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Early in May of the present year I saw a robust lad of ten years, who was brought to me for advice concerning a deformity of his foot. He wore an apparatus which had been applied by an instrument-maker, but there had been no improvement in his condition, the father stated. The foot was in marked valgus as he walked, though there was little if any lameness. The history of the case was that some months before he had sprained the ankle, but it was not thought to be of much consequence, and with domestic treatment passed off in a few days. It was some weeks after this injury when it was noticed that, in walking, the foot was thrown in marked eversion. He complained of no pain and was, in fact, unaware of the changed position of his foot until his attention was called to it. He was fond of play, and his activity was in no way diminished by the position which his foot assumed. The condition was believed to be "a habit," to use the father's words, and his pride was stimulated in various ways in an endeavor to have him overcome it. It was of no avail, however, and the family physician was consulted. The patient was turned over to an instrument-maker, who constructed a simple apparatus of two steel uprights and an inster strap attached to an ordinary leather shoe. This had been worn for two or three months when I saw the boy. There was no appreciable improvement from its use.

I made no inquiries concerning the family history, though the father was a man of highly neurotic temperament.

The examination of the foot showed a marked valgus with a slight prominence of the scaphoid, the arch being as well marked as on the other foot. There was no swelling of the joint, no tenderness—in fact, nothing abnormal but the position. He had complete motion in every direction but inversion, and in this lacked but a few degrees of perfect. When the foot was brought to the straight line the prominence of the scaphoid was not apparent. I was careful to notice this, as the father informed me that the physician who had previously seen the case was inclined to think that a slight displacement of that bone was the cause of the trouble.

There was a little atrophy of the calf—so little that it could have been but physiological. There was no contraction about the hip or knee, nor was there any tenderness. I examined the spine carefully for a trace of tenderness, but found it sound in all respects. I did not use any electrical test for the muscles of the leg.

The case impressed me at the time as a pure valgus, due possibly to a traumatism. The absence of pain and tenderness, and also of marked atrophy, certainly excluded any bone lesion. The boy did not seem to be of a neurotic type, having no resemblance to his father; and further, he looked upon any treatment as a burthen which would interfere with his accustomed out-door enjoyment. He was a sturdy, outspoken boy, and was irritable only on the subject of the apparatus, with which he found all manner of fault.

I recommended the cold douche and massage for the leg, and measured him for an appliance which consisted of a highly arched steel plate to which the foot was bound by straps of webbing, a shaft extending up the inner side of the leg, with a free joint at the ankle; the shaft or spring to be thrown out from 10° to 15° from the straight line. This was applied about a week later, and its immediate effect was perfect. He walked with the foot in the straight position. He was ordered to wear it day and night.

I did not see him for ten days or more, when he came to my office. It was reported that the foot was not doing so well and that he was beginning to turn it out as before. It was admitted that the apparatus had not been worn constantly, as the boy complained of it at night. He certainly did not walk as when he was last seen, but not so badly as reported. As the foot was released from the appliance it seemed to immediately settle into a more extreme eversion than I had before found. There was no excoriation, hardly a redness of the skin. On taking hold of the foot, I found the peronei group of muscles firmly contracted; the contraction coming on as the foot was touched.

The spasm was of the tonic type and relaxed only after several seconds of gentle traction, and was marked also when an attempt was made to apply the sole plate to the foot, and intensified as pressure was made by the straps to draw the foot to the straight line. This was a new development; at least, I was very much inclined to believe so, as I had examined him very carefully at the first visit and had detected nothing of this. The father knew nothing of it and I believe the boy was unconscious of it, for I tested him in various ways, by attracting his attention to other matters which would interest him thoroughly, and while so interested, if the foot were touched the contraction again came on. There had been no pain, there was no swelling or tenderness, and he was as active as usual, walking without lameness. This symptom seemed to be brought on by the use of the shoe and to be purely reflex. I believed that it might be overcome in a few days by the constant use of the appliance, and so advised, though I then thought that probably the case might have been a reflex—"hysterical," if you choose—one from the beginning. At any rate, I concluded to try the support for a short time. The promise was readily given that this course would be followed, though I had some doubt of it. I have not seen the boy since. The father came to see me just as I was about to leave the city in July. He said that the boy was no better, turned his foot out as much as before, and that peroneal spasm was the same. I told him to let me see the boy on my return and I would then dress the foot in plaster of Paris after the method used by Lorentz, of Vienna, in the treatment of ordinary flat foot.

Reviewing the case now I am of the belief that it was a neurosis, but if I was asked why so, I would be unable, perhaps, to say more than that I could think of nothing else, and also that the spasm of the peronei group did not imply anything more than a neurosis. As I have attempted to show in the preceding notes, there was nothing else which led me to this conclusion. I am unable to say positively that the condition was of reflex origin. There was nothing in the boy's temperament, his habits or surroundings, or in his manner, to point towards anything bordering on the hysterical. It was certainly not a spinal arthropathy.

The neuroses of joints must have, I think, a peculiar fascination for every orthopedic surgeon, for the reason, perhaps, that their solution is generally a difficult matter. In the ordinary diseases of joints we generally see them at second hand, where no special skill is necessary to make a diagnosis—it proclaims itself. I have found more difficulty in diagnosticating obscure ankle troubles than in any other joint, the hip or the knee being far more easily managed. I can recall several cases which I have seen in the past few years, most of them in consultation, where I insisted on further examination before giving an opinion, the symptoms about the ankle were so conflicting and obscure. In the hip or knee we are often able to determine at once the presence of the neurotic element. In the spinal arthropathies of children this is easily found, and its removal a question of but a few days.

The management of these neuroses of the ankle, it appears to me, presents unusual difficulties. If there be any genital irritation, of course that is easily disposed of, but when no spinal arthropathy or genital irritation exists there is very little that we can do in young children but to give general directions concerning exercise. Many of these conditions pass off without treatment as easily as they come. Tenotomy is often done for some of these neuroses, but it will be questionable as to whether any permanent benefit can be obtained from it. I am inclined to think that, when there is such marked spasm of a single group, the fixed dressing would be more serviceable than anything else.

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MERCURIC BI-CHLORIDE IN DIPHTHERIA.

BY JNO. S. COLEMAN, M.D.,
OF AUGUSTA, GA.

For my views in regard to the use of mercury in diphtheria I am indebted to the publication in Squibb's Ephemeris of a letter from the late Dr. Reiter, of Pittsburgh, Pa. Prior to 1883 I had successfully tracheotomized two cases of laryngeal diphtheria, but only to see both patients die. The first survived the operation three days, but the second only two hours—death ensuing from a collapse of the membrane below the opening in the trachea.

On April 26, 1883, I was called to visit J. C. C., æt. 6, one of a family of seven as fine, healthy children as I have ever known. He had decided fever with diffused redness of the whole fauces. Next morning dirty-yellow looking patches were to be seen upon either tonsil. On the 29th, at 9 A.M., this exudation had developed into a thick yellowish-white substance presenting the appearance of a fried egg. The next day he died of laryngeal stenosis. My associate in the case pronounced it to be the most malignant he had ever seen. Each day the children were fully examined; three of them had the ordinary exudative sore throat.

On the evening of May 6 a robust little girl of three years was found to have fever with intense redness of the throat.

May 7, A.M. A slight exudation was apparent; Temp. 101° F.; P.M., Temp. 102° F.

May 8, 9 A.M. She has passed a restless

night. Temp. 103.4°. Whole fauces covered with a thick dense deposit. 4 P.M. The membrane is apparently thicker than at morning observation. Temp. 103.8° F. So far as I could determine her condition was now as hopeless as was her brother's twenty-four hours before his death. With the boy I was anxious to use corrosive sublimate, but was dissuaded from so doing by two of the oldest and most distinguished of my confrères.

Convinced that the girl, too, must succumb, I determined to test the virtue of mercury. At 5 P.M., forty-eight hours after the onset of the disease, I began the use of hourly doses, one-eighth grain each, of corrosive sublimate. After the sixth dose her skin became moist and her temperature was reduced to 100° F. The interval between the doses was lengthened to two hours.

May 9, 9 A.M. Patient had slept well, excepting when aroused to take the medicine. During the night her bowels were moved three times; the actions, though small, presented the chopped-spinach like appearance so characteristic of the full effect of this remedy. To Dr. Reiter, this result was the index either for lengthening the interval between, or for diminishing the size of the doses. Her skin was moist and temperature normal. 4 P.M. I found the child bright and playful; large pieces of thick, typical membrane have been ejected in the "gagging" efforts produced by the medicine. The tonsils were now covered by a thin yellow film. 10 P.M. The patient was apparently so much better that the interval between the doses was increased to three hours.

May 10, 9 A.M. Patient had passed a restless night; two movements from bowels. The membrane had re-formed. Temperature normal. The hourly doses were resumed, and continued for sixteen hours, when an exfoliation of the membrane again took place. The interval between the doses was again increased to two, four, and finally six hours.

The further progress of the case was without incident. During the nine days of medication 84 doses were given, amounting to ten and a half grains.

In spite of the condemnation of this use of bichloride mercury by an eminent American authority, I have persevered with mercuric bichloride in diphtheria. Whilst it has been my good fortune not to see many cases, those I have seen have been safely conducted back to health. The terribly fatal nature of this malady forces me to crave the patience yet awhile of my professional brethren. Therefore, I shall give in detail the conduct of two other cases to a successful issue. To my mind tracheotomy and its recent substitute, intubation, are but temporary makeshifts, and in the large majority of cases futile. The disease being a blood-poison, our efforts must be directed to its destruction in and elimination from that fluid.

Late in the afternoon of December 11, 1888, I was called to see Ivey, æt. 6, the daughter of T. C. H. She had been sick for one week, but had not had medical attention. Her cough was shrill and raucous, with almost complete aphonia. A blistered surface upon the front aspect of her neck nearly two inches square was covered by a greyish dirty-looking pellicle. There was a slight rise in her temperature and a pulse-rate of 130. There was neither redness nor exudation to be seen in the fauces. I prescribed $\frac{1}{3\frac{1}{2}}$ grain of corrosive sublimate, to be given each hour, two teaspoonfuls of whisky every four hours, and all the milk that she could be induced to take.

December 12, 9 A.M. No material change. The dose of corrosive sublimate was increased to $\frac{1}{16}$ grain.

December 13. The patient was less hoarse, and her expectoration free.

December 15 the interval between the doses was increased to two hours.

December 17 there was so marked a change for the better in her condition that her mother was instructed to give the medicine once in four hours, and on the 20th the original dose of gr. $\frac{1}{3\frac{1}{2}}$ was resumed and administered night and morning for several days, and then entirely withdrawn. Convalescence from this time was uninterrupted.

On December 17 my attention was called to Nellie, sister of Ivey, aged 16 months. She had a decidedly husky voice, some increase of temperature, and a pulse-rate of 120. She, like her sister, had neither redness nor exudation in the fauces. I directed that she should be given hourly gr. $\frac{1}{3\frac{1}{2}}$ of corrosive sublimate; every two hours a teaspoonful of whiskey, and milk *ad. lib.*

December 18 the child was bright, but her hoarseness had increased; complete aphonia. The mercury was increased in the evening to $\frac{1}{16}$ grain hourly.

December 19, A.M. The constitutional symptoms were ominous, circulation bad, respiration rapid and labored. Still no implication of the fauces. P.M. She was seen, with me, by an esteemed medical friend who, after a careful examination, said: "This child will die."

December 20. I found no material change, but by evening her respiration was still more hurried, pulse quickened and skin hot. The thermometer was not used because of her irritability. One-eighth of a grain of corrosive sublimate was now directed to be given hourly. This dose was continued for seventy-two consecutive hours; *nine grains in three days.* Notwithstanding this enormous amount of the drug the bowels were scarcely sufficiently moved. Nausea and occasional vomiting were necessary results. Such resistance to the usual effects of this remedy can be accounted for only upon the theory that *diphtheria induces a tolerance for mercury.* The same

dose was continued for several days, but at longer intervals. At my visit on the morning of the 26th a devoted woman who had assisted in nursing the children handed me a piece of dried membrane about 2½ inches in length, the upper portion seemingly about two-thirds the circumference of the trachea of a child of that age. She stated that it, with about as much more, had been ejected after a violent fit of coughing and in which she thought the child would certainly die.

False membrane ejected on tenth day by Nellie Hunter, aged 16 months, December 26, 1888, after seventy-two consecutive hourly doses of one-eighth grain each of mercuric bi-chloride. Recovery complete.

After putting the specimen in alcohol I showed it to a physician, who thought he could see six impressions of tracheal rings. In the upper and broader portion three rings are beautifully and distinctly outlined. The membrane is of the thickness of heavy blotting paper. The hoarseness was materially benefited by a saline vapor from a large kettle upon the grate. By this means the atmosphere of the room was subsequently kept moist. The mercury was continued in $\frac{1}{3}\frac{1}{2}$ grain doses morning and evening for several days and then withdrawn. The convalescence from this time was uninterrupted.

It may be well to state that after the ejection of the membrane by Nelly both children were given, because of cardiac indications, three-drop doses of tincture of digitalis every six hours.

January 24, 1889. Both children have made good recoveries.

THE Chief of Police of Berlin has ordered the hospital authorities to note the numbers of the carriages in which patients are taken to the hospitals, and the nature of the diseases of the patients. When the patients are suffering from infectious or contagious diseases the carriages are to be disinfected.

RECURRENT FATTY CYST OF THE ORBIT.

GROWING FROM THE EXTERNAL SHEATH OF THE OPTIC NERVE. REMOVED MAY, 1878, AND AGAIN, JANUARY, 1888.

BY J. H. BUCKNER, M.D.,
OF CINCINNATI, OHIO.

J. O., a young girl, æt. 10 years, was brought to my office in the early part of May, 1878. A soft elastic tumor projected from the external canthus of her left eye, overlapping and pressing the globe inwards and upwards. The pupil was almost entirely covered by the upper lid on account of the displacement, and her vision in that organ was consequently reduced to a bare perception of large objects. Vision of R. E. normal.

The growth of the tumor had been exceedingly slow, making but little progress for two or three years from the time it was first noticed by her, until a few months prior to her visit to my office, when it began to enlarge more rapidly. Her relatives belonged to the laboring class, and could not give a definite history as to the time of its first appearance; and, as its growth had been so slow after it emerged from the orbit, it had probably started during early infancy, if it was not congenital.

As will be observed by the photographs, herewith submitted, Jessica was a well developed child for her age. The second photograph was taken about two months subsequent to the removal of the tumor, and shows that the displaced eyeball had regained its normal position.

Operation.—About the middle of May, 1878, (my notes do not give the exact date) assisted by Drs. C. S. Muscroft, Jr. and L. McLean Slough, my little patient was anæsthetized with chloroform, and I proceeded in the following manner to remove the tumor. The conjunctiva was slit

vertically over the swelling, and, with probe-pointed scissors, separated from the external portion of the growth, the cyst wall was quite thin and was snipped at one or two points, but, owing to the semi-solid character of the contents, but little was evacuated. I then proceeded to separate the cyst from the globe and surrounding cellular tissue with the handle of a scalpel, and, with the probe-pointed scissors going deep into the orbit. My assistant rotated the ball inwards, until, following the cyst wall, I could feel, with my little finger, the optic nerve, the wall of the cyst partly enveloping it, and being, apparently, a continuation of the external sheath of the nerve. With great care I divided the cyst wall with my scissors as closely as possible to the nerve.

The contents of the deeper portion of the cyst were much softer than the external part, and escaped when the cyst was divided; it was lardaceous in appearance and consistency. The orbital cavity was thoroughly cleansed by syringing with clear, cold water; *no antiseptics being used.* The edges of the mucous membrane were united with three or four interrupted silk sutures, and a compress wet with cold water, applied over the closed eyelids. The cold water dressing was continued for twenty-four hours, there was but little inflammatory reaction, and the wound healed by first intention.

The sac and its contents were sent for examination, to Dr. L. R. Longworth, who was at that time, about eight months prior to his death, an ardent student of pathology and microscopy. He pronounced the contents of the cyst to be chiefly fat and epithelial scales.[1]

The vision of Jessica, two months subsequent to the operation, was normal. After the second photograph was obtained, I did not see her until she came to my office in January, 1888. I found the left eye squinting inwards about four lines. Upon raising the upper lids a soft swelling was discovered, occupying the superior and external angle of the orbit. L. E. V.—$\frac{20}{30}$, R. E. V.—$\frac{20}{20}$. She had first noticed the return of the tumor during the summer of 1887. There was but little exophthalmos, however, the stiffness and immobility of the eye, and the comparatively rapid growth of the tumor, made her anxious to have it removed.

She was admitted to the Eye Ward of St. Mary's Hospital on January 21, and on the 25th of the same month, assisted by Dr. Bertling, who administered the chloroform, I proceeded to dissect the cyst from the globe and surrounding cellular tissue; the cyst enveloped the ball for fully half of its circumference. She behaved badly under chloroform, and the thin cyst wall was clipped at several points, allowing its fluid contents (which were of the consistency and color of thick cream) to flow off. This also made the dissection difficult and tedious.

Deep in the orbit, the cyst was so closely adherent to the surrounding adipose tissue that much of the latter was also removed. The most thorough antiseptic precautions were taken in this operation; the instruments and sponges being cleansed with a solution of bichloride of mercury, 1 to 5,000; and after the removal of all the cystic membrane I could find, the cavity was cleansed with the same antiseptic wash. The conjunctiva was united with two or three silk sutures, and a compress wet with the sublimate solution applied over the closed lids.

The operation was followed by intense inflammation of the cellular tissue of the orbit, of the conjunctiva and of the eyelids. Upon the third and fourth day the swelling of all the tissues surrounding the ball was so great as to prevent the possibility of inspecting the cornea, which I fully expected would slough as the result of the surrounding pressure.

On the second day ice compresses were tried, but finding the application of heat to give greater relief, the hot water dressing was substituted, and continued until the subsidence of the swelling. Four-grain solutions of cocaine and atropine were frequently instilled into the conjunctival sac, and the inflamed tissues were irrigated with the antiseptic wash as hot as it could be borne, every two hours.

There was but little discharge throughout, and on the sixth day the inflammation began to subside by resolution. The only damage to the cornea was a small ulcer near the centre, which soon healed. The ocular conjunctiva, externally and inferiorly, still remains red and thickened. The outward movement of the eye is yet limited, due, probably, to the stretching and weakening of the external rectus. The squint is reduced by measurement to one and a half lines, but she now has diplopia, which did not exist previous to the operation. Her vision remains the same, viz. $\frac{20}{30}$

[1] This case was reported to the Cincinnati Academy of Medicine during the winter following the operation, but, after a careful search of the Lancet and Clinic of that period, I do not find that it was ever published.

for the left, and $\frac{20}{20}$ for the right eye, with D. 1 Sph. V. L. E. $\frac{20}{20}$. The diplopia is overcome by a prism of 10°, and will, no doubt, be relieved when the exudation, resulting from the inflammation of the orbital cellular tissue, has been absorbed, and the external rectus has regained its normal strength by exercise and contraction. Otherwise the advancement of the external, and tenotomy of the internal rectus may be necessary.

The cyst removed in this case was of the class termed dermoid, the etiology of which is, in a great measure, a matter of speculation. The tendency to recur is a subject of more importance to us. The four cases reported by Dr. Fox, an epitome of which was published in the *Archives of Ophthalmology*, Vol. XIV, do not furnish the requisite data, on account of the shortness of time since the operation, to judge of the efficacy of his method of treatment with nitrate of silver. The same may be said of Thompson's case, treated by electrolysis. I doubt if either method, unless the entire cystic membrane could be reached by the caustic, or cautery, would certainly prevent a recurrence of the tumor. It would, evidently, have been hazardous to vision to have penetrated the orbit to the proximity of the optic nerve, with either of the mentioned caustics, which would have been requisite to success in the case I have just reported.

The analysis of the seventy-three cases, collected and reported by Berlin, quoted by Cornwall as an addendum to the report of his case, published in Vol. XI of the *Archives*, shows the important fact that orbital tumors of this class occur more frequently under 20 years of age, and that a large proportion of them are congenital. If we adopt the invagination theory we must regard all dermoid cysts as having the germ of development at birth.

I regard, as one of the most valuable points for oculists in connection with orbital cystic tumors, to be reliable data from which to estimate the frequency of recurrence under the different methods of treatment. This would be a fruitful field for the investigation of some of the ambitious and younger members of our specialty.

AN INTRODUCTION TO THE STUDY OF PNEUMONIC FEVER.

BY EDWARD F. WELLS, M.D.

SECOND PAPER.—EPIDEMICS.

Pneumonic fever sometimes prevails as an epidemic, and, when wide-spread and very fatal, it naturally attracts the attention of the medical historian. Accounts of such outbreaks come to us from very remote times, although there must always remain a doubt whether the great epidemics of which we read were really pneumonic in their nature.[1]

Thus the Plague of Athens, which, after devastating Æthiopia and the Mediterranean countries, destroyed more than one-fourth of the inhabitants of the Grecian metropolis,[2] has been considered a form of this disease,[3] although the wonderfully graphic account of the epidemic left us by Thucydides[4]—himself a sufferer from the malady and one of the few attacked who recovered—scarcely warrants the conclusion.

The victims were generally attacked "suddenly, while in full health, and without ostensible cause. First they were seized with violent flushings about the head, and redness and turgescence of the eyes; within, the fauces and the tongue became all at once blood-red, and the breath unnatural and fœtid. After this came on sneezing and hoarseness; and in a short time the suffering extended down into the chest, with violent cough; and when it settled on the heart it disturbed its action, and produced bilious discharges of all kinds known to medical language, accompanied by great distress. In most cases a dry hiccough came on, causing violent spasms, which sometimes ceased soon, and in other cases lasted a long time. The surface of the body was neither very hot to the touch nor pallid, but rather red, livid, and covered with an eruption of small blisters and sores; while the internal heat was so great, that the patients could not bear upon them the thinnest garment or the finest linen, or to lie in any other way than naked, and had a longing to throw themselves into cold water. Nay, many who were not carefully watched actually did so, into the tanks, urged by an insatiable thirst; and it made no difference what they drank, much or little. They suffered severely from a distressing restlessness and want of sleep throughout. Yet the whole time the disease was at its height, the body was not sensibly emaciated, but held out against all this suffering in a way beyond belief; so that most died about the seventh or ninth day, of inward fever, still retaining considerable strength. Or, if they survived this crisis, when the disease passed into the abdomen, severe ulceration supervening, with profuse diarrhœa, the majority died of this last from sheer exhaustion."

The author goes on to give the sequellæ of the malady, the refusal of birds of prey to touch the unburied dead, the uselessness of preventive and curative treatment, and to state that persons once attacked were proof against subsequent infection.

This strange epidemic was probably an eruptive fever, *sui generis*, with pulmonary symptoms resembling those of pneumonic fever.[5]

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[1] Heiss, Inaug. Diss., München, 1857, S. 20, says that the disease is *never* epidemic, but in this he is clearly in error.

[2] Smith, History of Greece, N. Y., 1855, p. 289.

[3] Sturges, Nat. Hist. Pneumonia, London, 1876, p. 4; Loomis, Pepper's Syst. Med., Phila., 1885, Vol. iii, p. 307.

[4] Opera, Lib. ii, cap. xlix-li, Collins' Ed., N. Y., 1883, p. 49.

[5] For further information regarding the nature of this terrible epidemic the reader is referred to Pliny, Nat. Hist., Lib. vii, cap. 50; Aristotle, De Mirabilibus, Sec. i; Lucretius, De Rerum Natura, Lib. vi, H. 1234 et H. 1241; Hippocrates, Aphor, Lib. iv, aph. 55, et De

The Black Death of the middle of the fourteenth century, which swept away one-third[6] of the inhabitants of every land which it visited,[7] has also been considered[8] a form of pneumonic fever.[9]

Beginning in the north of Asia, it spread from one end of Europe to the other and sensibly depopulated every State through which it passed.[10]

The marked phenomena of the malady were ardent fever, cough, sanguineous expectoration, fœtid breath, epistaxis, diarrhœa and petechiæ. The disease was considered so contagious that to be near those affected was to invite certain death, "so that parents abandoned their infected children and all the ties of kindred were dissolved.[11]"

TABLE I.—CHRONOLOGY OF EPIDEMICS.

YEAR.	SEASON.	COUNTRY.	DISTRIBUTION.
1440	. . . . .	Italy[12]	Padua, Venice and other
1521	. . . . .	Italy[14]	Venice [places[13]
1535	Spring	Italy[15]	Venice
1537	. . . . .	Italy,[16]	Brescia, Lombardy
1550	. . . . .	Switzerland[17] .	Graubünden
1557	Winter	Europe . . [18] .	France[19], Belgi'm[19], Netherlands[20] and Genoa,[21] Italy, widely distribut'd
1563	. . . . .	Italy[22]	Involving entire country
1563	Winter	Netherlands [23]	Antwerp and other places
1564	Spring	Switzerland [24] and Germany	Widely distrib'd in Switzerland, Würtemburg,[25] & Lower Rhine reg'n[26]
1568	Spring	Italy[27]	Mountainous parts of the
1571	Spring	France[28] . . .	Paris [North
1574	Spring	France	Paris and other places[29]
1576	Spring	Germany[30] . .	Lower Rhine region
1583	Spring	Germany[31] . .	Western parts[32]
1585	Spring	Bayern[33] . . .	Ingolstadt & other places
1586	Spring	Italy[34]	Basano and vicinity
1598	. . . . .	France [35] . . .	Paris
1602	Winter, Spring & Summer	Italy	Perona,[36], Imola,[38] Urbino,[38] and many other places[39]
1613	Winter	Italy[40]	Gualda
1624	Spring	Germany . . .	Augsburg[41]
1633	Spring	Italy[42]	Forli and entire Romagna[43]
1652	. . . . .	Switzerland . .	Glarus[44]
1685	Spring	Switzerland . .	Geneva and vicinity[45]
1689	Spring	Germany[46] . .	Breisgau & Phillipsb'g[47]
1694-5	Winter and spring	Switzerland[48] .	Very widely distributed
1696	Spring	Italy	Ferrara[49]
1708	Spring	France	Paris[50]
1709	Winter and spring	Europe[51] . . .	Widely distributed thro'out Northern Italy,[52] Western Switzerland[53] and S-Eastern France[54]
1713	Summer	Italy	Faletto,[55] Turin
1714	Winter and spring	France	Paris[56]
1716	Spring	France	Paris[57]
1719	. . . . .	United States .	Hartford,[58] Conn.
1719	Spring	Switzerland . .	Buchs[59]

Morb. Vulgar, Lib. ii; Aretæus, Acut. Morb., Lib. ii. cap. iii, Ed. Kühn, S. 38; Galen, Com. Aph. Hippocratii, Ed. Kühn, p. 410. Sprengel, Geschicte d. Medicin; Littré, Œuvres de Hippocrate, T; I. p. 122; Meade, Med. Works, Lond., 1762, p. 239; and others.

[7] Hecker, Der Schwarze Tod in 14 Jahrh., Berlin, 1832, says one-fourth, and Meade, op. cit., p. 244, makes it one-half.

[8] Hume, Hist. England, N. Y., 1854, Vol. ii, p. 237.

[9] Probably erroneously.

[10] Sturges, op. cit., p. 4; Loomis, op. cit., p. 307; Satterthwaite, Phila. Med. News, Jan. 5, 1889, p. 1.

[11] See, for further information, Stow, Survey of London, 1633, p. 117; Barnes, History of Edward III, Cambridge, 1688, p. 437; Guy de Chauliac, Tract. ii, cap. v, p. 113; Villani, Inst. di Matteo, Lib. i, cap. 2; Ludolf, Hist. Æthiop., Lib. i, cap. 13; Mezeray, Hist. de France, T. i, p. 798; Maitland, Hist. London, 1772, Vol. i, p. 128, and Vol. ii, p. 1022; Northouck, Hist. London, 1773, p. 70; and many others.

[12] Ozanam, Hist. Méd. des Mal. Epidem., Paris, 1817–23, T. iv, p. 76; Copland, Med. Dic., N. Y., 1855, Vol. ii, p. 881, and Vol. iii, p. 219; Hecker, De Const. Epidem., ex Mut. Corpor. Humani, Erfurth, 1791; Sturges, op. cit., p. 4; Hirsch, Histor. Geog. Path., Erlangen, 1860–64, Bd. i, S. 195; Guy de Chauliac, op. cit.,; Parker, Brit. Antiq., p. 360; Juergensen, Ziemssen's Handb. d. Spec. Path. u. Therap., Leipzig, 1877, Bd. v, S. 30.

TABLE I—*Continued.*

YEAR.	SEASON.	COUNTRY.	DISTRIBUTION.
1720	Spring	Hungary[60] . . .	
1720	Spring	Italy	Rome[61]
1721	Spring	Italy	Turin[62]
1728	Spring	France	Paris[63]
1730	Spring	Minorica[64] . . .	Widely distributed
1730	Spring	Italy	Padua[65]
1731	Winter	France	Paris[66]
1734	Spring	Germany . . .	Frankfort-on-the-Main [67]
1734	Fall and winter. .	Spain	Verga[68]
1735–6	Fall and winter. .	Spain	Asturia[69]
1736	Winter	Scotland. . . .	Fife[70]
1737–8	. . . . .	France	Rouen[71]
1738	. . . . .	Italy	Padua[72]
1739	Spring	France	Pavilly, Normandy, and vicinity[73]
1740–46	Winter and spring	England. . . .	Plymouth[74] and South of England
1745	Spring	France	Aigues-Mortes[75]
1745–46	Winter and spring	Minorica[76] . . .	Widely distributed
1748	Spring	France	Languedoc[77]
1749	Winter	United States .	Long Island[78]
1751	Winter and spring	France	Nerac,[79] Calan[80] & vic'ty
1751	Winter	Italy	Forli[81]
1753	. . . . .	France	Montpelier[82]
1754	Spring	France	Paris[83]
1754	Winter	Italy	Padua[84] . . . . .
1754–55	Winter and spring	Switzerland . .	Basel[85]
1755	. . . . .	Spain	Lisbon[86] and other parts
1755	Winter and spring	France	Artois[87] and vicinity
1755	Winter and spring	France	Bourbon-Lancy[88]
1755	Winter and spring	France	Belle-Isle-in-the-Sea[89]
1756	Spr. and autumn.	France	Aumale[90] and vicinity
1756	. . . . .	Flanders[91] . . .	Widely spread
1757	Spring	France	Paris[92] and vicinity
1757	Spring	Spain	Valenciennes[93]
1757	Spring	France	St. Jean d' Angely[94]
1757	. . . . .	Austria	Vienna[95]
1757	Spring	France	Toulon[96] and vicinity
1757	Winter	Switzerland . .	Canton Bern[97]
1757	Winter	France	Capistan,[98] Languedoc
1758	Winter	France	Lambese,[99] Provence
1758	Spring	France	Martiguez[100]
1758	Spring	France	Lille[101]
1758	Spring	France	Valence[102]
1758	Spring	France	Angenois[103]
1758	Winter and spring	France	Tarascon,[104] Provence
1758	Autumn	France	Vicinity of Lille[105]
1759	Spring and fall . .	Switzerland . .	Basel,[106]
1760–61	Winter	United States .	Connect't,[107] widespread
1761	. . . . .	Italy	Brescia[108]
1761	Winter	Italy	Ponte Longo,[109] nr Padua
1762	Winter	Switzerland[110] .	Bern and Wallis
1762	. . . . .	England. . . .	Chester[111] and other places[112]
1764–65	Winter	Switzerland . .	Lausanne,[113] Waadt, Bern Solothurn & many other places[114]
1764–65	Winter and spring	France	Castle Sarrasin[115]
1765	Winter and spring	Germany . . .	Clausthal[116]
1765–66	Winter and spring	Switzerland . .	Waadt[117]
1767	Winter and spring	Germany . . .	Eisenach[118]
1767	Spring	France	Vivarais,[119] Provence, Languedoc,[120] & other parts of the South[121]
1767	. . . . .	Italy	Tanova Val., Piedmont[122]
1768	Spring	Switzerland . .	Canton Zurich[123]
1768	Spring	France	Languedoc,[124] lower part
1770	Spring	Germany . . .	Hameln[125] and vicinity
1771–72	Winter	France	Verdun[126] and vicinity
1772	Spring	France	Eplechin[127]
1773	Spring	France	Rouen,[128] Castle Jaloux, etc.,[129]
1773	. . . . .	Austria	Vienna[130]
1775	Winter and spring	Italy	St. Miniato[131]
1776	Winter	France	Dieppe,[132] Eplechin,[133] Bernay[134]
1779	Spring	Denmark	Copenhagen harbor[135]
1779	Spring	France	Langon[136]
1780	Spring	Italy	Livorno[137]
1780–81	Winter	Italy	Como,[138] Florence[139]
1782–3–4	Winter	France	Widely extended[140]
1783	Winter	Switzerland . .	Bern,[141] Waadt[142] and other places
1785	Winter and spring	France	Ansauville[143]
1786	Spring	France	Vitry-le-François[144]
1787	Winter	Italy	Padua[145]
1788	Winter	France	Nayon and vicinity[146]
1788–89	Spring and aut'mn of both years . .	France	Poitiers[147]
1791	Autumn	United Staste .	New England States[148]
1792	. . . . .	United States .	Southern States[149]
1793–94	Winter	Italy	Pavia[150]
1795	. . . . .	Italy	Lombardy[151]
1795–96	Winter and spring	Italy	Turin and throughout Piedmont[152]

TABLE I—*Continued.*

YEAR.	SEASON.	COUNTRY.	DISTRIBUTION.
1800	Winter and spring	United States .	Greenville, N. C.[153]
1801	. . . . .	France	Joigny[154]
1802–3	Winter and spring	Germany . .	Stollberg,[155] Freiburg[156] and other places
1803	. . . . .	Austria	Baden,[157] near Vienna
1803	Winter and spring	Germany . . .	Frankenstein[158]
1805	Winter	England. . . .	London[159]
1805–6	Winter	France	Tonneins[160]
1806	Spring	France	Canton Monthois[161]
1806	Winter	France	Widespread in south of France[162]
1806	Winter	Switzerland . .	Uri, Luzerne, Glarus, Unterwald[163]
1806–16	. . . . .	N. America . .	Very widely distribut'd[164]
1807	Winter	France	Dept. Var,[165] Besançon[165]
1807	. . . . .	United States .	Connecticut[166]
1808	. . . . .	Germany . . .	Oldenburg[167]
1808	. . . . .	France	Clairvaux and vicinity[168]
" –9–10	Winter and spring	United States .	South Carolina[169]
1809	Winter and spring	United States .	Georgia,[170] N. Carolina[171]
1809	. . . . .	France	Joigny[172]
1810–11	Spring and winter	Holland	Holstein[173]
1811	. . . . .	France	Bresançon and vicinity[174]
1811	Winter	United States .	Vermont[175]
1812	Summer	Germany . . .	Lucka[176]
1812	. . . . .	Denmark[177] . .	Very widely distributed
1812	. . . . .	France	Tonnerre[178]
1812	. . . . .	France	Savoy[179]
1812	Spring	United States .	L. Island,[180] Dutchess[181] and Westchester[182] counties, N. Y.
1812	Fall and winter . .	United States .	N. England[183] army posts
1812–13	Winter	United States .	Maine[184] and all New England[185]
1812–15	Winter	United States .	Region of Great Lakes[186]
1812–14	Winter	United States .	N. York[187] various parts
1812–16	Winter	United States .	Tennessee[188]
1813	Winter	United States .	Newcastle,[189] Delaware
1813	Winter	United States .	Albany,[190] N. Y.
1814	Spring	United States .	New Orleans,[191] La.
1814–15	Winter	United States .	Virginia,[192] Kentucky[193]
1815–16	. . . . .	United States .	Georgia[194]
1816	Winter and spring	United States .	Ohio,[195] Massachusetts[196]
1816	Spring	Italy.	Annecy,[197] Savoy
1817–19	Spring	France	Mayenne[198]
1818	Spring	Switzerland . .	Bern and Obwalden[199]
1819–20	Spring	United States .	Virginia,[200] widely distributed
1822	Winter	United States .	Georgia and Carolinas[201]
1824	Spring	Sweden.	Stockholm[202]
1826	Summer	Sweden.	Dannemere[203]
1826	Winter	United States .	Maryland, Hartford Co.[204]
1826–27	Winter	France	Trayes[205]
1827–28	Winter	France	Mericourt[206]
1828	Autumn	Italy.	Pozzuoli[207]
1829	Winter	Italy.	Veltlin,[208] Capitanata[209]
1831	Winter	United States .	Sommersville,[210] Tenn.
1831–32	Winter	France	Vicinity of Effig[211] and the Rhine
1832–33	Winter	Switzerland . .	Uri,[212] Wallis,[212] Tessin
1832	Winter	France	Canton d' Aubin,[213] Aveyron
1832	Winter	Ireland	Dublin[214]
1833	. . . . .	France	Paris[215]
1834	Winter	Switzerland . .	Arau[216]
1835–36	Winter and spring	Germany . .	Markthiedenfeld,[217] Homburg
1837	. . . . .	France	Paris[218] and Noyers[219]
1837	. . . . .	United States .	New England[220]
1839	Winter	Germany . . .	Halle[221]
1840	Spring	Switzerland . .	Höngg[222]
1840	. . . . .	France	Nantes[223]
1842–43	Fall and winter . .	France	Paris,[224] Marsillagues[225]
1843	. . . . .	United States .	Indiana and Kentucky[226]
1844	Winter	Switzerland . .	Richterschwiel[227]
1845	. . . . .	United States .	Port Republic, Va.[228]
1845	. . . . .	France[229] . . .	Southeastern portion
1847	. . . . .	France	Paris,[230] Verseilles[231]
1847	. . . . .	Norway	Christiana[232]
1848–49	Winter	France	Paris[233]
1850–51	Winter	Germany . . .	Sommerfeld[234]
1851–52	Winter	United States .	Charleston,[235] S. C.
1852–55	. . . . .	Alaska	Widely distributed[236]
1853	. . . . .	England. . . .	London[237]
1854–55	Winter	Ireland[238] . . .	Eastern portion
1856	Winter and spring	England. . .	Leicestershire[239]
1857–58	Winter and spring	United States .	Caswell Co.,[240] N. C.
1860	. . . . .	United States .	Beaver Valley,[241] Pa.
1863	. . . . .	Iceland	Widely distributed[242]
1863	. . . . .	Malta[243]	Ships St. Jean d'Acre and Cressy
1866	. . . . .	Norway	Christiana[244]
1867	. . . . .	N. Brunsw'k[245] .	Soldiers
1870	. . . . .	Alaska	Kodiac[246]
1875	. . . . .	Fiji Islands[247] .	

TABLE I—*Continued.*

YEAR.	REASON.	COUNTRY.	DISTRIBUTION.
1875	. . . . .	United States .	Windham,[248] Maine
1876	Spring	United States .	Boston[249]
1878	. . . . .	Germany . . .	Moringen[250]
1879	Winter	United States .	Boston[251]
1879	. . . . .	Norway	Loberg[252]
1879	Spring	United States .	Minster and Loramies, Ohio[253]
1880	. . . . .	India	Dera Gazi Kahn[254]
1880	. . . . .	France	Marseilles[255]
1880	Spring	Germany . . .	Ober Sichte[256]
1880	Spring	United States .	Auglaize Co., Ohio[257]
1881	Spring	Alaska[258] . . .	All along the coast
1881	Spring	Germany . . .	Rietnordhausen[259]
1881	Spring	Germany . . .	Becherbach[260]
1881	. . . . .	Germany . . .	Lustnau[261]
1882	. . . . .	Italy.	Tregagno[262]
1882	. . . . .	Germany . . .	Erbenheim[263]
1882	Spring	Germany . . .	Amberg Prison[264]
1884	Winter	England. . . .	Newcastle-on-Tyne[265]
1874	. . . . .	United States .	South Berwick, Me.[266]
1885	. . . . .	England. . . .	Dingwall[267]
1885	. . . . .	Russia	St. Petersburg[268]
1885	. . . . .	United States .	Suffield,[269] Conn.
1885	. . . . .	United States .	Maine,[270] various places
1886	. . . . .	Canada	Toronto[271]
1887	. . . . .	Ireland	Belfast[272]
1887	. . . . .	England. . . .	Wylam[273] & Dingwall[274]
1887	. . . . .	United States .	Muskingum Valley, O.[275]
1888	Winter	United States .	Kingsbridge, N. Y.[276]

[12] Savanarola, Practica, Tract. vi, cap. x, rub. 13, Venet. 1497.

[13] The disease was apparently contagious.

[14] Montanus, Rhasis Enarrat, Basil, 1562.

[15] Massa, Febr. Pestil., etc., Venet., 1556; Forzio, quoted by Renzi, Storia della med. in Italia, Neapoli, 1845, iii, p. 551.

[16] Mundella, Epist. Med., Basil, 1538, Ep. 16.

[17] Guggenbühl, Der Alpenstich, etc., Zurich, 1838.

[18] The symptoms of this epidemic were violent cough, dyspnœa, bloody expectoration on the third day and death in about a week.

[19] Sturges, Nat. Hist. Pneumonia, London, 1876, p. 5.

[20] Dodonæus, Med. Obsv., Colon, 1581, p. 62.

[21] Paschetti, De destillatione, etc., Venet., 1615.

[22] Coiter, Ober. in Bonet. Sepulchret, iii, p. 191.

[23] Dodonæus, op. cit., ad. ann., 1557.

[24] Dunus, Epist. Med., Figuri, 1592; Gessner, Epist. Med., Figuri 1577; Guggenbühl, op. cit.; Meyer-Ahrens, Schweiz. Zeitschr. f. Med., 1845, S. 52.

[25] Schorndorf, quoted by Gessner, op. cit.

[26] Wier, Obsv., Lib. i, Amstelod., 1660, p. 910.

[27] Cardanus, Paralipomen, Lib. vii, cap. 8.

[28] Baillou, Epidem., Lib. i, Genev., 1762.

[29] Hirsch, Hist. Geog. Path., Erlangen, 1862, Bd. ii, S. 40.

[30] Wier, op. cit., p. 913.

[31] Lebenwaldt, Hauss-Arzenb., Nürnb., 1695, S. 20.

[32] Malady considered contagious.

[33] Oethæus, Quoted by Schenck, Obsv. Frankf., 1665, p. 777.

[34] Prosper Alpinus, De Præsagienda Vita, Lugd., 1733, p. 51.

[35] Fontanus, Med. Prac., Lib. ii, cap. 3.

[36] Chiochi, Comment. Feb. Moris, etc., Venet., 1604.

[37] Codronchi, De Morb. qui Imolæ vagati sunt., etc., Bon., 1603.

[38] Colle, Cosmitor Med., Lib. iii; Fonte, Consult. Med., Frankf., 1609, p. 20; Chomel, Pneumonie, Leipzig, 1841, S. 244.

[39] Pericarditis was a common complication, the pericardial sac being found full of fœtid fluid.

[40] Tosius, De anthrace tract., etc., Venet., 1618.

[41] Hochatätter, Rar. Obsv. Med., Frankf., 1674, p. 89.

[42] Baronius, De Pleuropneumonia, Lib. ii, Farolivii, 1638.

[43] The disease was complicated by angina and was considered contagious. See Chomel, op. cit., S. 245.

[44] Guggenbühl, op. cit., S. 14.

[45] Hirsch, op. cit., S. 32; Guggenbühl, op. cit., S. 15.

[46] Vorster, Exper. de Pleuropneum. Epidem., Basil, 1689; Brunner, De Pleuropneum. Epidem., Heidelb., 1689; Ozanam, Hist. Med. des Mal. Epidem., Paris, 1817–23, T. iv; Chomel, op. cit., S. 245; Sturges, op. cit., p. 6.

[47] The characteristics of the epidemic were pain in the side, oppression, cough, delirium, convulsions and colliquative diarrhœa. The disease was very fatal and was considered contagious. On post-mortem section the lungs were found acutely inflamed, solidified, purulent and gangrenous. The pleuræ and pericardium were filled with bloody serum and there were "polypi" in the right chambers of the heart. From this last circumstance and the great fatality of the malady, it was called "pleuropneumonia maligna polypasa." This is the earliest reference to heart-clot with which I am acquainted. That this should have been one of the peculiarities of the epidemic is remarkable, but it is by no means unique, for the fact has been noticed in other outbreaks. See Manlius, Lancet, N. Y., 1885, vol. i, p. 479.

[48] Guggenbühl, op. cit., S. 15.

[49] Lanzoni, Opp., Lausann., 1738, ii, p. 449; Simon, Epidem. 170 Siècle, Paris, 1859.

[50] Jour de Méd., T. xviii, p. 177.

[51] The disease was very fatal and was considered contagious. Jaundice was a prominent symptom. At the beginning the cases

were sthenic, but as the epidemic progressed asthenic symptoms prevailed. See Sturges, op. cit., p. 6.

[52] Guidet, Abh. d. galligt. Fieber, Heidelb., 1790, S. 64.
[53] Christian, Eph. Med. Phys., Cent. Vet. vi, App. 109.
[54] Deidier, Consult. et Obsv. Méd., Paris, 1754, T. ii.
[55] Guidet, op. cit., S. 76.
[56] Jour. de Méd., T. xix, p. 81.
[57] Ibid., p. 270.
[58] Webster, Epidem. Dis., Hartford, 1799, Vol. i, p. 225.
[59] Breslauer Samml., März. 1719, S. 297.
[60] Fischer, Breslauer Samml., Aug. 1720, S. 169.
[61] Gagliardi, Relaz. di mali di petto. Rom., 1720; Sturges, op. cit., page 6.
[62] Richa, Const. Epid., Turin, ann. 1721; Bianchi, Hist. Hepatica. Genev., 1725, Lib. i, p. 759; Sydenham, Opera, Genev., 1736, Lib. ii, p. 439.
[63] Jour. de Méd., T. xx, p. 459.
[64] Fonts, quoted by Cleghorn, Ep. Krankh. Minorica, Gotha, 1776.
[65] Penada, Obsv. Med. Prac., Padua, 1792.
[66] Jour. de Méd., T. xxi, p. 68
[67] Bergen, Com. Lit., 1734.
[68] Villaba, Epid. Espanola, Madrid, 1802, ii, p. 194.
[69] Villaba, Epid. Espanola, Madrid, 1802, ii, p. 194.
[70] Edinb. Med. Inq. and Obs., Vol. v, p. 35.
[71] Le Cat, Phil. Trans., Vol. xlix, p. 49.
[72] Morgagni, De Caus et Sed. Morb., Lib. ii, ep. xxi, sec. 26–27.
[73] Lepecq, Med. Topog. de Normandie, Stendal, 1794, S. 137–218.
[74] Huxham, Epidem. Dis., Lond., 1748, Vol. ii, p. 59. In this epidemic the onset of the attack was marked by shivering, followed by fever, oppression, distressing cough, acute and lancinating pains in the chest and headache. The pulse was quick and hard; the breath hot and offensive; the expectoration thin, yellow or sanguineous, offensive and often so acrid as to cause soreness of the pharynx. Faint and uncertain perspirations appeared upon the face and head. Colliquative sweating and petechia were harbingers of death. Huxham, the learned historian of the epidemic, described the disease under the name of *febris pneumonica*, and considered the local affection the subordinate part of the malady.
[75] Sauvages, Nosol. Meth., Cass. iii, Pleuritic, S. 16.
[76] Cleghorn, Epid. Dis. Minorica, Lond., 1762, p. 261. This author has left us a very graphic description of this epidemic. The attack "commonly began like an ague fit, with shivering and shaking, flying pains all over the body, bilious vomiting and purging, which were soon succeeded by quick breathing, inordinate thirst, inward heat, headache and other feverish symptoms. In a few hours the respiration became more difficult and laborious; the most part of the sick being seized with stitches in the sides. In a few instances the complaints preceded the fever; in others they did not come on till the day after. Many were drowsy and inclinable to sleep, but they raved at intervals, or were much disturbed by extravagant dreams. In the meantime the internal heat was in several very moderate; in some less than natural; but for the most part it was so intense as to raise the thermometer to the 102d degree; and often in the afternoon to the 104th. The pulse was likewise very variable, not only in different persons, but in the same at different times. In some cases it was like that of a man in health, or even slower than natural, while the patient was in the greatest danger; so that it could neither be depended upon as a prognostic sign, nor as an indication of cure. . . . Besides some abatement of the fever, which commonly happened every morning, it was remarkable that upon the third day, or beginning of the fourth, there was frequently a great remission, sometimes a total cessation of every violent symptom, so that the sick were thought to be out of danger; but on the fourth or fifth day a delirium suddenly came on, or the breathing became more difficult than ever, and one or both of these symptoms increasing hourly, the patient expired in a day or two, either suffocated or raving mad, unless nature or art assisting, he had the good fortune to escape by some critical evacuation."
[77] Bouillet, Pleuropneum. Epid., Basançon, 1759.
[78] Bard, Am. Med. and Phil. Reg., Vol. i, p. 409.
[79] Raulin, Obsv. de Méd., Paris, 1754, p. 296.
[80] Darluc, Jour. de Méd. de Paris, T. vii, p. 61.
[81] Sauvages, quoted by Hirsch, op. cit., S. 42.
[82] Sauvages, Nosol. Meth, Sec. 7.
[83] Malouin, Hist. de l'Acad. des Sci., Ann. 1754, p. 500.
[84] Morgagni, op. cit., Lib. i, Epist. vii, Sec. 12.
[85] Zwinger, Acta Helvet., Lib. iii, p. 303.
[86] Haller, Op. Path. Obsv., Obsv. 70.
[87] Jour. de Méd., T. iii, p. 117.
[88] Pinot, Jour. de Méd., T. iii, p. 122.
[89] Rochard, Jour. de Méd., T. iv, p. 129.
[90] Marteau, Jour de Méd., T. vi, p. 455.
[91] Sturges, op. cit., p. 7.
[92] Jour. de Méd., T. vii, p. 79.
[93] Deplaigne, Jour. de Méd., T. vii, p. 168.
[94] Marchant, Jour. de Méd., T. vii, p. 134.
[95] Auenbrügger, Invent. Novum, Vien, 1761, Sec. 20.
[96] Berthonie, Jour. de Méd., T. vii, p. 295.
[97] Guggenbühl, op. cit., S. 15.
[98] Bouillet, Mém. sur les pleuropneum. Ep., Besançon, 1759.
[99] Roustan, Jour de Méd., T. ix, p. 269.
[100] Soumeire, Jour de Méd., T. ix, p. 158.
[101] Boucher, Ibid., p. 95.
[102] Gignoux, Jour. de Méd., T. xii, p. 62.
[103] Gignoux, Ibid., p. 62.
[104] Monblet, Ibid., T. ix, p. 537.
[105] Boucher, Jour de Méd., T. x, p. 242 et p. 523.
[106] Zwinger, op. cit., Lib. iv, p. 337.
[107] Webster, op. cit., p. 248.
[108] Roncalli, quoted by Hirsch, op. cit., S. 42.
[109] Ozanam, op. cit., T. ii, p. 172; Galetti, Adv. Med.
[110] Haller, Abh. ü. Faulfieber, Solothurn, 1786.
[111] Sturges, op. cit., p. 9.
[112] The epidemic which began in Lisbon in 1755 and gradually spread, during the next few years, throughout Western Europe, was marked by jaundice, a sense of constriction around the waist, gangrenous sore throat and purulent lungs. As it extended into Germany vomiting, diarrhœa, headache and sopor became prominent symptoms. Haller, op. cit. Convalescence was often delayed by an eruption of abscesses, especially in the region of the clavicle. Chomel, op. cit., S. 249.
[113] Tissot, Epidem. in Lausanne, Zürich, 1767, S. 55.
[114] Guggenbühl, op. cit., S. 16; D'Apples, Acta Helvet., Lib. vi, p. 213; Tissot, Zimmermann's Ejd. Schriften, Leipz., 1784, Bd. vi, S. 497.
[115] Sauvages, op. cit., Sec. 2.
[116] Leutin, Obsv. Med., Cellis, 1770, Fascis. II, 1.
[117] Tissot, Epidem. in Lausanne, Zürich, 1767.
[118] Grimm, Epidem. zu Eisenach, Heidelb., 1768.
[119] Menuret, Hautersierck's Rec. d'Obsv. de Méd., T. ii, p. 231.
[120] Helminthiasis was a marked feature of this epidemic. Sturges, op. cit.
[121] Sauvages, op. cit.; Deidier, Obsv. de Méd., T. ii; Chomel, op. cit., S. 245; Hirsch, op. cit., S. 32.
[122] Jemina, De Pleuritide, etc., Mondovi, 1789.
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[164] The great American epidemic of the early part of the present century began at Medfield, Massachusetts, in 1806, from whence it spread, "gradually extending itself, winter after winter, throughout New England, into Canada," the Middle and the Southern States, "progressing from village to village, and from one portion of the country to another," until it exhausted itself in 1816. See Mann, Med. Sketches, Dedham, 1816; Dickson, Path. and Therap., Vol. i, p. 435; Williamson, op. cit.; Condie, Watson's Prac. Phys., Phila., 1845, p. 612; Gallup, Epidemics of Vermont, Boston, 1815; Lee, Copeland's Med. Dic., N. Y., 1855, Vol. ii, p. 887, et. al. The epidemic was so widespread and fatal that during five months of 1813 6,400 died out of a New England population of 218,000. Lee, op. cit.

In this epidemic the prodromal stage was often greatly prolonged, the actual development of the disease being preceded by a considerable period of languor, lassitude, numbness and pains in the limbs, chilliness, etc. As the case progressed the symptoms assumed a pulmonary form, with oppression of the chest, pain in the side, cough, bloody and dark expectoration, etc. The pulse was weak and frequent; the temperature often low; the tongue moist and furred at first, but soon becoming dry and dark; there were severe pains in the head and stomach, with delirium, and diarrhœa was very frequent. In those who recovered convalescence was prolonged.

For further references see local epidemics in these years.

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252 Am. Jour. Med. Sci., Jan,, 1883, p. 262.

We see from the preceding table[277] that epidemics of pneumonic fever have appeared in all parts of the world, although the elevated regions[278] of northern Italy, south-eastern France and Switzerland have been their favorite haunt.

TABLE II.—SHOWING DISTRIBUTION OF EPIDEMICS.

COUNTRY.	NO.	COUNTRY.	NO.	COUNTRY.	NO.
France	67	Ireland	3	North America	1
Italy	34	Denmark	2	Iceland	1
United States	33	Sweden	2	Malta	1
Germany	24	Alaska	2	New Brunswick	1
Switzerland	18	Austria	3	Fiji Islands	1
England	10	Minorica	2	India	1
Spain	4	Europe	2	Russia	1
Netherlands	3	Hungary	1	Canada	1
Norway	3	Scotland	1	Total	222

Winter and spring have furnished[279] the great majority of epidemics, although they have occasionally appeared in autumn and, rarely, in summer.

One of the curiosities of epidemic pneumonic fever is that it sometimes singles out certain classes of the population for its victims. Thus, the epi-

253 In the spring of 1879 cases of pneumonic fever were very frequent in this vicinity. In one house I observed five cases, the patients being consecutively attacked within ten days. All were very ill and one died. The residence was upon a hill-side, facing east and sloping to a river a few hundred feet distant. The drainage and hygienic surroundings were unexceptionable. In another family of six persons five were attacked, all recovering This residence was also in a good hygienic condition.
254 Costello, Lancet, N. Y., 1881, Vol. i, p. 319.
255 Gibbs, U. S. Naval Rpts., 1881, p. 410.
256 Münnich, Deutsche Med. Wochensch., 1882, No. 11; Holwede, Arch. f. Kinderheilk., Bd. ii, Heft 1 und 2.
257 Author. A great number of cases, confined to circumscribed localities.
258 Rosse, op. cit., p. 17.
259 Penkert, Berliner Klin. Wochenschr., No. 40-41, Bd. xviii.
260 Von Butry, Deutsche Arch. f. Klin. Med., Bd. xxix, p. 193.
261 Caton, Lancet, 1884, Vol. ii, p. 135.
262 Massalongo, Lo Sperimentale, 1885; Cincinnati Lancet and Clinic, Nov. 3, 1883, p. 398; Deutsche Med. Zeitung, No. 41, 1885. The village of Tregagno contains about 2000 inhabitants, and is situate in a narrow windy valley, but the people were strong and healthy and had suffered from no previous epidemic disease. One hundred were attacked, with a mortality of 30 per cent. Males succumbed in greater proportion than females, although attacked equally. At the beginning children were principally attacked, but as the epidemic advanced the middle aged, and, finally, elder persons were also stricken. When the disease entered a house the victims were successively attacked. There were usually prodromata, and the symptoms were typhoidal from the first. In some cases the disease was not localized until several days had elapsed, and in others it could not be discovered during life. The apices of both lungs were generally affected. The liver and spleen were congested and enlarged. The urine was increased in quantity and albuminous. The duration was from seven to nine days. Microorganisms, supposed to be the cause of the disease, were found when sought for.
263 Senfft, Berliner Klin. Wochenschr., 1883, No. 28.
264 Kerschensteiner, Bair, ärztl., Intell. Bl., Bd. xxviii, No. 20; American Journal Medical Sciences, January, 1883, p. 262; Emmerich, Sanitary News, Nov. 12, 1887. In this prison epidemics persistently recurred, and Friedlander's pneumococcus in enormous numbers were found in the dumping material from the infected rooms. Splenic enlargement was a marked feature of the cases.
265 Armstrong, Lancet, 1884, Vol. i, p. 127.
266 Sleeper, Rpt. Me. Bd Health, 1885, p. 242.
267 Bruce, Brit. Med. Jour., 1886.
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269 Mason, Rpt. Conn. Bd. Health, 1885, p. 338.
270 Smith, Rpt. Me. Bd. Health, 1885, p. 257; Sewall, Ibid., p. 202; Hurd, Ibid., p. 191.
271 Geike, Trans. Int. Med. Cong., Washington, 1887; N. Y. Med. Rec., Sept. 10, 1887, p. 294.
272 Lancet, 1887, Vol. ii, p. 1146.
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277 No attempt has been made to render this table complete.
278 See Lombard, Climat. de Montagnes, p. 70.

demic of Ober-Sichte was remarkable in that the malady was confined to children. From March 20 to April 2, fifteen children, ranging in age from 1 to 5 years, out of a population of 50 children, were attacked with pneumonic fever. For a long time previously and subsequently there were no cases of the disease in the vicinity.[280]

The Alaska epidemic of 1881 was confined almost exclusively to the native population. At Ounalaska the only sufferer, not a native, was from the island of Mauritius. The same peculiarity was noted at St. Paul's, Unza, Kodiak, Cook's Inlet, Prince William's Sound and other villages.[281]

A vast and imposing array of alleged causes for these outbreaks have been enumerated by authors, but the majority of these will not withstand the test of honest criticism. They have been attributed to geological, meteorological and social conditions; to peculiarities of residence, soil and drinking-water, food, habits of living, states of the air and of vegetable and animal life; and, finally and always to those omnibuses of indolence and ignorance, "epidemic influences," "infection" and "filth."

In the Rietnordhausen epidemic the following conditions prevailed: The village, of 700 inhabitants, is located upon a hillside in a high and mountainous country. The first cases were schoolchildren, and as the disease spread it attacked principally the families to which the school-children belonged. In all forty-two were attacked, with two deaths—the disease being very mild. Adjoining the school was a cemetery, located upon filled ground, and in which the soil-water stood above the height of the buried dead.[282]

In 1863 epidemic pneumonic fever broke out on board H. M. ships St. Jean d'Acré and Cressy of the Mediterranean fleet. Of 815 persons on board the former 410 were attacked, and of 720 on board the latter 298 were affected. The disease was considered contagious, and seemed to be communicated to the other inmates of the Malta Hospital by patients sent there from the ships.[283]

Referring to the Alaska epidemic of 1881, Rosse[284] says: "A singular coincidence connected with the outbreak being its appearance at these places[285] immediately or soon after the arrival of the first vessel in port. This circumstance so impressed itself upon the native mind as to give rise to a general and strong belief in the importation of the disease."

Epidemic influenza has been followed by a great prevalence of pneumonic fever, as in England in the seventeenth and eighteenth centuries, in France in the early years of the present century, and in New England in 1837.[286]

An intelligent review of all the facts which have, thus far, been presented, affords convincing proof that epidemics of pneumonic fever do not depend upon any of the causes which have been mentioned, although they may favor the operation of the exciting cause. There is, however, nothing mysterious or freakish about epidemic diseases; if they advance rapidly it is because the germ of the malady is abundantly nourished; if their progress is stayed it is because it no longer finds the food upon which it feeds; if the fatality is great the poison is virulent and energetic or the resistance of the victim is slight; and if the outbreak is mild it is because the balance of power lies upon the side of those attacked.

There can be no doubt as to pneumonic fever —epidemic as well as sporadic—everywhere and always being due to the action of a single peculiar and specific morbific material, which, in the case of epidemics, is fed up to a point of intense virulency and may act upon a population less able than usual to withstand its onslaughts.

Many epidemics have impressed upon them peculiarities which serve to distinguish them from all others. These variations may be seen in the character of the subjects attacked, the mode of invasion, progress and symptomatology, the complications and sequelæ, the fatality and morbid anatomy, etc.

In the Irish epidemic of 1854–55 the symptoms and signs of the first stage of the pneumonic inflammation were suddenly developed, continued for a short time only and subsided with singular rapidity. Stealthily, rapidly and unexpectedly was the disease developed, and equally as silently, quickly and mysteriously did it disappear—flitting like a shadow across the path and leaving as little indication of its presence.[287]

In the Moringen epidemic the principal characteristics were diarrhœa, pleuritic effusion, enlargement of the spleen, albuminuria and diffuse nephritis, pericarditis and fatty degeneration of the heart, meningitis and great prostration.[288]

In the epidemic of Deri Gazi Kahn, in which

[279] For further information concerning epidemic pneumonic fever the reader is referred to Milliken, Cincinnati Lancet and Clinic, December 16, 1882, p. 578; Geike, Trans. International Medical Congress, Washington, 1887; Tennent, Epidemics of Virginia, Edinb., 1742; Bouillet, Pleuropneumonies Epidemique, 1759; Lebert, Berliner Klin. Wochenschr., October 23, 1871; Moore, N. Y. Med. Record, September 10, 1887, p. 314; Gairdner, Lancet, 1887, vol. ii, p. 247; Griesniger, Virchow's Handb. d. Spec. Path. u. Therap., Bd. ii, S. 43; Hirsch, Handb. d. Hist. u. Geog. Path., Bd. ii, S. 26 et seq; Gebel, Jour. d. Prak. Heilk., Bd. xvii, S. 54; Fox, Reynolds' Syst. Med., Phila., 1880, vol. ii, p. 159; Sturges, Nat. Hist. Pneumonia, London, 1826, p. 4; Juergensen, Ziemssen's Handb. d. Spec. Path. u. Therap., Bd. v, S. 30; Morgagni, De Caus. et Sed. Morb., Ep. xxx, art. 26; Rohé, Jour. Am. Med. Assoc, July 2, 1887, p. 3; Grisolle, Traité de la Pneumonie, 1841, p. 139; Laennec, Diseases Chest, N. Y. 1830, p. 225; Chomel, Pneumonié, p. 331; Swett, Dis. Chest, p. 80; Simon, Traité der Epidem., Paris, 1859; Auenbrügger, Invent. Nov., etc., Vien., 1761.

[280] Münnich, Deutsche Med. Wochenschr., November 11, 1882; Holwede, Arch. f. Kinderpeilk., Bd. ii, Heft 1 and 2.

[281] Rosse, Cruise of the Corwin, Wash., 1883, p. 16.

[282] Penkert, Berliner Klin. Wochenschr., October 3 und 10, 1881.

[283] Bryson, Lancet, N. Y., 1881, vol. i, p. 198.

[284] Cruise of the Corwin, p. 16.

[285] Ounalaska, St. Paul, Unza, Kodiak, Cook's Inlet, Prince William's Sound and other coast villages.

[286] See Sydenham, op. cit; Huxham, op. cit.; Andral, Clin. Med., Phila., 1843; Laennec, op. cit.; Bard, Med. and Phil. Reg., vol. ii, p. 409, Copeland, Med. Dic., N. Y., 1855, vol. ii, p. 888; Williamson, op. cit.; Hosack, Med. and Phil. Reg., vol. iii, p. 448; Low, Med. and Phil. Reg., vol. iv, p. 20; Lee, Copeland's Med. Dic., vol. ii, p. 888.

[287] Stokes, Med. Times and Gaz., May 26, 1855.

[288] Kühn, Arch. f. Kinderheilk., Bd. xxi, Heft. 4. See also Lancet, Aug. 24, 1878.

40 persons out of 550 lost their lives in a few weeks, the local morbid processes proceeded with the utmost rapidity through all the stages of inflammation to suppuration, abscess and gangrene. Both lungs were usually affected, and after death were found to be, to a great extent, completely disorganized. The pleuræ were generally implicated, being covered rather thickly with lymph and their cavities filled with a dirty sanguinolent fluid. The blood was dark and thin. From the first there was profound prostration, the teeth were covered with sordes and there were catching pains in both sides.[289]

In the Canton Aubin epidemic the disease was distinctly remittent in character. The local pulmonary affection appeared to be a part of a general disease, which would suddenly attack or vacate any organ of the body. Intermittent and remittent fevers prevailed in the locality.[290]

Periodicity was also a marked feature of the Charleston epidemic of 1851–52.[291]

In the Alaska epidemic of 1881 the disease was marked by great dyspnœa, imperfect aëration of the blood, insomnia and profound physical and mental depression—indeed the latter was such that it seemed impossible to impart the least ray of hope to a patient who had made up his mind to die from the onset of the attack. The malady pursued a very rapid course and was extremely fatal.[292]

In the Rouen epidemic the lungs and stomach were often found gangrenous, the tongue dry and black, the face pale and the abdomen tympanitic. Almost all the patients had a very fœtid diarrhœa. A purple eruption covered the surface of the body. The disease was considered contagious.[293]

Purpura and helminthiasis were prominent symptoms of the Provence and Languedoc epidemics of 1767.[294]

Scurvy complicated the epidemic pneumonic fever which prevailed in Nantes in 1840. The disease was of a typhoid type, with extensive implication of the pleuræ.[295]

In the epidemic described by Bennett[296] the disease was characterized by extensive pleuro-pulmonary inflammation, abundant effusion into the pleural sac, with but slight consolidation of the lung. The inflammation was sometimes confined to a single lobe, but oftener there was no well defined margin. The expectoration was darker, more sanguinolent and less tenacious than usual. Respiration was but little increased in frequency and dyspnœa was remarkable by its absence.

The mild epidemic which visited Boston, in 1876, was characterized by a slow, insidious invasion, a prolonged and typhoid course and frequent hæmorrhages.[297]

The symptoms offer an infinite variety. There may be prodromata, with an insidious and prolonged invasion, or it may appear in the ordinary manner, or the access may be remarkable for its suddenness and impetuosity.

There may be an initiatory chill of greater or less intensity and duration, although this is lacking in many epidemics. The temperature curve may follow a higher or lower plane than ordinarily, or it may be very irregular in its course. The pulse may beat with great force and rapidity, or it may be weak, or it may be even slower and of greater volume and force than in health. Respiration may be very rapid and difficult, or it may be easy, regular and natural. The breath may be unaltered or it may have a hot, foul or a peculiar nauseous sweetish odor. Pain and cough may be present or absent, and when present may show striking peculiarities. Expectoration—not always present—may be hæmorrhagic, muco-purulent, gelatinous, gangrenous or so acrid as to corrode the mucous surfaces with which it comes in contact. Diarrhœa is a rather frequent symptom, and it may be colliquative, dysenteric, gangrenous or fœtid. Helminthiasis may be a marked feature. The urine may be excessive, scanty, albuminous or hæmorrhagic. The tongue may be clean and moist, foul and coated, or dark and dry. Sordes are often present. The abdomen may be painful and tympanitic. The mind may be clear or profoundly affected, as with melancholia, apathy, delirium, sopor or coma, Convulsions are not uncommon. Jaundice has been often noticed.

In some outbreaks the type of the disease has been sthenic, and in others asthenic, or it has begun in one form and changed to the other. In some the local, and in others the general symptoms were most prominent. In some the local inflammation passed on with the utmost rapidity to the total destruction of tissue, and in others there has been a late localization of the disease or the pulmonary lesion was even unsuspected during life. In some the local affection was of the most transient nature, whilst in others it was very persistent. Sometimes the local disease was quite migratory and erratic in its course and at other times it and the general symptoms as well, was distinctly remittent or intermittent in its progress. Hæmorrhages and various eruptions have been frequently noted. Inflammatory and gangrenous angina, scurvy, abscesses, splenic enlargement, hepatic and nephritic changes, cardiac degeneration, endocarditis, pericarditis with hæmorrhagic or purulent effusion, pleuritis with similar effusions, inflammation and gangrene of the stomach and bowels, meningitis, mental aber-

[289] Costello, Lancet, N. Y., 1881, vol. 1, p. 319.
[290] Grifoulière, Gaz. Med., 1833, p. 475.
[291] See Charleston Med. Jour., vol. v, p. 824.
[292] Rosse, op. cit.
[293] Lepceq de la Cloture, Obsv. sur les Mal. et Const. Epidem., Paris, 1776.
[294] Deider, Obsv. de Méd., T. 11; Sauvages, op. cit.; Menuret, Quoted by Chomel, op. cit., S. 245.
[295] Laveran, Gaz. Hebdom., 1865, No. 35.
[296] Med. Times and Gazette, Oct. 23, 1853.
[297] Curtis, Boston Med. and Surg. Jour., May 11, 1876, p. 556.

rations, etc., have all been frequent epiphenomena in various epidemics

The duration and prognosis will vary so much with the character of the epidemic that no trustworthy generalizations can be made. It can only be said that the malady may be so mild as to be almost insignificant, or it may be so virulent as to constitute a disease of the greatest fatality, rivalling, in this respect, any other.

The lesions found after death have also varied greatly in different epidemics. In some it is the pulmonary tissues which alone, or mainly, bear the brunt of the disease, whilst in others the bronchi or the pleuræ are principally affected; the inflammation of lung substance being of secondary importance. In some the local affection has proceeded with wonderful rapidity to complete consolidation, or even destruction whilst in others this was effected more slowly, and in yet others it never occurred—the morbid action not passing beyond the stage of engorgement and stasis, or, if perchance an attempt at exudation had been made, the interalveolar exudate was gelatinous and non-plastic. The limits of the local morbific process may be well defined and lobar, or it may be diffused and with no distinct line of demarcation. The pleura and pericardium are very often affected, with a tendency to early and extensive effusion, which is very likely to become purulent. The blood is sometimes dark, thin and non-coagulable and at others there is a peculiar tendency to the formation of heart clot.

Besides the strictly pulmonary lesions one may meet, as a part of the epidemic, the lesions peculiar to cerebral and spinal diseases, enteric and puerperal fevers, dysentery, erysipelas, rheumatism, scurvy, diphtheria, measles, variola, scarlatina, pertussis, enteritis, duodenitis, hepatic and nephritic diseases, etc.

In some epidemics resolution occurs promptly and completely, whilst in others it does so but slowly, irregularly and incompletely, or there may be a strong tendency for the inflammatory action to pass on to chronicity, abscess or gangrene.

AN EXTENSIVE BURN WITH SERIOUS COMPLICATION.—RECOVERY.

BY HERBERT C. JONES, M.D.,
OF WINTER PARK, FLORIDA.

On May 18, 1888, about 3 P.M., I was called to see Mrs. James S., æt. 27, the mother of twins two years old, and then in the eighth month of her second pregnancy. She was of robust constitution, a native of the North of Ireland, three years a resident of the United States, the last year a resident of Florida.

The family were living in an unfinished house, about a mile and a-half from my office. While engaged in baking bread, the back part of her dress became ignited by the flames from the side-door of the cooking stove, which she had thoughtlessly left open after replenishing the fire. Unconscious of what had taken place, she walked to an open passage, and stood in the breeze until enveloped in flames. Her screams soon brought the only man in the vicinity, who was working a few hundred yards from the house. He attempted to smother the fire with a quilt, but only succeeded in burning his hands, and the quilt. Seizing a pail full of water, standing by, he threw that over her, and by this means extinguished the flames, which had little left to feed upon, having consumed all her clothing except that which covered her breast, and shoulders, and feet.

Upon my arrival I found her enveloped in a sheet, pale and trembling, but conscious. A clammy sweat and fluttering pulse denoted marked shock. The "burnt district" embraced the front and sides of the abdomen, both gluteal regions, almost the entire inner and outer surface of both thighs, one leg to the foot, one hand and arm to the shoulder, and the other to the elbow. The chest and back as far as the middle of the lumbar vertebræ, were not involved, and the face was only slightly burned.

The prognostic problem involved a burn, (though in places superficial,) involving fully one-half the integment—the patient sure to undergo a premature delivery, (fœtal movement ceased to be felt soon after the accident,)—the hottest part of a semi-tropical summer just ahead; and an exceptionally hot one it proved. Viewing it from this standpoint my prognosis was unfavorable. Perhaps this view was strengthened by an erroneous impression we of the North have of the character and influence of a Florida summer. Assisted by Dr. M. A. Henkel I dressed the burns with cloths dipped in the orthodox mixture of oil and lime water; super-imposing a thin layer of cotton wadding and a light roller bandage, and gave the patient stimulants and sufficient opiate to lull pain. At the next morning and evening visit catheterization was found necessary. During the day vomiting was quite frequent, and annoying. That this was due to shock, and not to the opiate, was evident from the excellent tolerance of opiates subsequently.

Thirty hours after the burn labor began, and before I reached the house rupture of the membranes occurred. With no untoward symptoms, and no particular difficulty, except such as resulted from the deplorable state of the patient, she was delivered of still-born twins, weighing about four and a-half and five pounds respectively. Anæsthetics were not used for fear of renewing the vomiting, and because, with me, chloroform even in labor, is a remedy to be resorted to *in extremis*.

Briefly to summarize the subsequent treatment:

the dressings were removed as infrequently as a due regard to cleanliness and antisepsis would permit. The cloths were wrung out of an antiseptic solution before being saturated with the "carron oil." The principal difficulties were encountered in dressing the gluteal region, and the abdomen, which was the most deeply burned, and the last part to heal. A water-cushion was placed under the hips, and afforded great relief. Deodorized tincture of opium in syrup of chloral was used for pain and insomnia. Quinine was given regularly, and in small doses for a few weeks. The bowels were relieved, when necessary, with salines. The blisters were emptied by needle punctures, and sloughs, and dead epidermis removed as soon as separation occurred, or it could be done without irritation.

After a few weeks the patient was allowed to sit in a reclining chair, and at the end of three months she was dismissed well, except for a small abdominal sore, which has since healed. All disfigurement, save a slight scarring of the hands, is concealed by her clothing; and she is to-day apparently as strong as ever. Whether the cicatrized abdominal walls would again endure the distention of pregnancy is a question of the future. Such an occurrence I should view with some apprehension.

Winter Park, Florida, Jan. 22, 1889.

MEDICAL PROGRESS.

TREATMENT OF DIPHTHERIA.—HOYER (*Memorabilien*, 1888, 129) defines his views on the nature of diphtheria and describes his method of treating it. Considering it to be a disease produced by a microörganism invading a tonsil whose epithelium is lost, he devotes his attention to the prevention of this invasion, or to the destruction of the bacteria which have already attacked the tonsil. For this purpose he paints the tonsils with a solution of thirty parts of gallic acid, sixty parts of distilled water and ten parts of glycerine. A brush of fine bristles is employed and considerable pressure exercised against the diphtheritic membrane. He carries out this procedure three times in succession, repeats it ever six or eight hours, and continues the treatment until the diphtheritic membrane has disappeared. He prescribes also a gargle of one part of chlorine water and three parts of distilled water to be used several times betweeen the applications to the throat. The same mixture is to be injected into the nose in cases of malignant diphtheria. Persons who are in attendance upon patients with the disease should also use a gargle of the same nature. The author declares that he cannot say sufficient in praise of gallic acid for the purpose indicated. It renders the putrefactive bacteria innocuous, hinders their growth and increase, by its astringent action on the tonsils protects against their absorption, and by the same action loosens the deposition upon them. It is also entirely uninjurious to the patients.

The Constant Blue-Gum Steam Treatment.—J. MURRAY-GIBBES (*Australian Med. Jour.*, Oct. 15, 1888) writes again in favor of the use of eucalyptus in diphtheria, having recommended it a year ago. By giving the vapor of the oil with steam we not only gain the beneficial effects of the latter, but obtain an antiseptic action also. He keeps his patient under a tent-like covering in a warm, moist atmosphere containing a volatile oil, obtained by placing leaves of the eucalyptus in a jug of boiling water. In this atmosphere the patient remains as long as there is any inflammation of the throat. Since 1881 he has treated 163 cases in this way, and with only one death. In the practice of a colleague 305 cases were treated in the same manner, and with only one death. In the section of New Zealand in which he practices blue-gum steam has become a household remedy, on account of the confidence which the people have in it for sore throat, cold, bronchitis, and other chest affections. The author says that the antiseptic steam prevents the decomposition of the membrane in the throat, and the consequent septic absorption. It also prevents the spread of the disease to other members of the family.

Insufflations of Sugar.—C. LOREY (*Deutsch. med. Wochenschr.*, No. 46,944, 1888) highly recommends the treatment of diphtheria by the insufflation of very finely powdered sugar upon the tonsils, pharynx, posterior nares, the entrance to the larynx, and after tracheotomy, through the canula. As a result of careful observation on eighty cases of diphtheria of all forms, and at all ages, he concludes that under this treatment the duration and extent of the diphtheritic deposit, and the danger of general infection can be lessened. The odor of decomposition also disappears, the mucous membrane of the tonsils and pharynx becomes more natural in appearance, and is coated with an abundant mucous secretion, and the false membrane softens and becomes detached. In many cases in which the larynx was involved the insufflation loosened the cough, and the threatening symptoms gradually ceased. The favorable action of sugar on unhealthy granulations has long been recognized. In the pharynx the fine particles of sugar penetrate into the mucous membrane and cause a flow of its secretion toward the surface, loosening the membrane, and perhaps washing away the microorganisms. General treatment is, of course, to be employed also, and for this purpose the author prefers apomorphia, and later an easily digested iron preparation.

Acetic Acid in Diphtheria.—F. ENGLEMANN (*Deutsch. med. Wochenschr.*, No. 46, 945, 1888) made extended bacteriological studies on many of the different substances usually employed as local applications in diphtheria, in order to determine their power to prevent the growth of micro-organisms. After detailing somewhat the nature of his experiments, he concludes:

1. Diphtheria must be treated on the same principles which are generally accepted as applying to analogous processes in surgery and obstetrics.

2. The majority of the substances recommended for local application in diphtheria deserve no confidence, since they do not exercise sufficient antiseptic power.

3. Almost only those act with certainty which in sufficient concentration have proved themselves of value in surgery also. Like these acts the hitherto little esteemed acetic acid.

4. Most of the powerful antiseptics are illy suited for use in diphtheria, on account of their local or general poisonous action.

5. Acetic acid appears especially to be recommended on account of its certain antiseptic action, its harmlessness, and the slight irritation which it produces. It possesses also in high degree the power of penetrating animal tissues.—*American Journal of the Medical Sciences*, January, 1889.

VALUE OF OPIUM, MORPHINE, AND CODEINE IN DIABETES MELLITUS.—DR. THOMAS R. FRASER reports one case, out of several detailed observations, in which the results may be stated as follows:

1. The case was one in which mere restriction of diet did not have so marked an effect as occurs in many cases. The prospects of successful treatment were not, therefore, very hopeful.

2. Codeine had a very decided effect in reducing the quantity of urine, sugar, and urea. When contrasted with the reduction produced by restricted dietary alone, the addition of 9 grains of codeine in the day lessened by about one-third, and of 15 grains of codeine in the day by about one-half, the quantity of fluids drunk, and the quantity of urine, sugar and urea, and it slightly reduced the specific gravity of the urine.

3. The addition to 15 grains of codeine of the $\frac{1}{20}$, and afterwards of the $\frac{1}{10}$, of a grain of sulphate of atropine, caused a still further, though not a large, reduction.

4. After the administration of codeine had been stopped, an interval of six days on restricted diet, without any medicinal treatment, was not sufficient for a deterioration to occur to the conditions present before codeine had been given.

5. The subsequent administration of ½ grain of opium thrice daily produced a considerable reduction. With 1 grain of opium thrice daily the reduction was to less than one-half when contrasted with the amounts during a restricted diet alone, and before any medicinal treatment had been adopted. One grain and a half thrice daily produced a further reduction; and when to it was added $\frac{1}{20}$ of a grain daily of sulphate of atropine, a still further reduction occurred.

6. Restricted diet, with ⅓ of a grain of hydrochlorate of morphine thrice daily, or 1 grain daily, also produced a marked reduction; and the conditions relative to the points under investigation were even more satisfactory than when 15 grains daily of codeine were being administered. While this small quantity of morphine was being taken, the fluids drunk by the patient were only one-third, the urine and sugar less than one-half, and the urea about one-half of the amounts during the period of restricted diet alone, before medicinal treatment had been commenced.

As to the general state of the patient during each of these conditions of treatment, restriction to an antidiabetic dietary produced improvement in thirst and mental activity. So long as the quantity of codeine was limited to 6 grains daily, this improvement was maintained; but when 9 grains, and even more, when 15 grains were being taken daily, the appetite failed, she became listless and apathetic, vertigo was occasionally experienced, and the patient remained for a considerable part of each day asleep in bed. The addition of atropine to the codeine did not produce any improvement, but rather added to the discomfort by impairing vision; and even when only $\frac{1}{60}$ of a grain was being taken thrice daily, the pupils became slightly dilated. When codeine and atropine were stopped, and a restricted dietary alone adopted, the health was not improved. The symptoms referred to became, indeed, worse, and prevented a prolongation of the period of restricted diet without medicine to the extent that seemed desirable before a new plan of treatment was adopted. When opium was now given a marked improvement occurred, but the larger doses caused some drowsiness during the day. With 1 grain daily of hydrochlorate of morphine the condition of the patient became more satisfactory. The drowsiness soon disappeared, the appetite improved, and she became sufficiently active to engage in ward work. Constipation of the bowels was not produced by any of the medicinal agents employed.

A consideration of these averages seems to show that, under a daily administration of 1 grain of hydrochlorate of morphine, the quantity of fluids drunk, and of urine, urea, and sugar voided, was rather less than when 3 grains of opium, and decidedly less than when 15 grains of codeine were being taken. In three other cases in which I have instituted a comparison between these substances in diabetes mellitus, morphine also showed a marked, though not so great, superiority over codeine. After this note had

been prepared, I have seen a recent paper by Dr. Bruce, of London, in which similar results were obtained in two very carefully observed cases. So far as I know, also, the favor with which codeine is regarded in this disease has not been supported by any observations calculated to show its value relatively to opium or morphine so clearly as in the cases to which I have referred. The evidence, therefore, seems to indicate that codeine is a less powerful remedy in diabetes than either opium or morphine, and to confirm the view that in its therapeutic value it ranks as a weak or diluted morphine.

The conclusion receives an importance (no doubt a subsidiary one) from the circumstance that codeine is about three times as expensive a substance as morphine. The great demand for it has led to its being manufactured from morphine so largely, that probably one-fourth of the codeine in the market is an artificial substance. When we consider the large doses that are required in diabetes mellitus, and the general protacted duration of this disease, we are, I think, justified in asking for more clear evidence of its superiority over morphine than has as yet been produced.—*British Medical Journal*, Jan. 19, 1889.

RELATIONSHIP BETWEEN NEURALGIA AND ABORTION.—DR. A. D. LEITH NAPIER, in a consideration of this subject, says:

1. Neuralgia and abortion are frequently associated.

2. In certain cases of "habitual abortion," neuralgia invariably manifests itself as the first symptom, attacking cranial or spinal nerves remote from the uterus.

3. If treatment relieves the pain there is a strong probability that uterine disturbance will not commence, or, if already there have been contractions, these will cease.

4. Neuralgia, while perhaps most common in the rheumatic, occurs in different types of patients: in the anæmic, dyspeptic, or mal-nourished; or in the over-fed, indolent, and plethoric.

5. Fœtal death is sometimes the evident cause; sometimes evidently results from the reflex irritation associated with the neuralgic pain.

6. Acute neuralgias occurring in pregnancy may not in any way interrupt healthy gestation.

7. When severe facial, cervical, or other neuralgia yields to treatment, even although the embryo is dead, uterine contractions and emptying will not occur for days, perhaps weeks.

8. The trifacial, occipital, and cervical nerves are most commonly affected; but brachial, intercostal, lumbar and sciatic neuralgias are also met with.

9. Acute gastric irritation is associated with neuralgia and abortion. Pregnancy sickness, although very severe, but seldom causes miscarriage; but gastrodynia, which is sometimes accompanied by salivation and a constant feeling of nausea and depression, not infrequently precedes acute neuralgia, which eventually causes uterine irritation, and ends in abortion.

The deduction is, that there are two sets of nerve affections in pregnancy: 1, those of simple localized peripheral origin, as neuralgia from dental caries, from vesical, rectal, or pelvic pressure, which seldom go on to cause uterine neuralgia of such degree as will end in contractions sufficient to cause premature expulsion of the embryo; and 2, neuroses, which owe their origin to general conditions of constitutional disturbance, and which may manifest themselves by appearing as acute neuralgia or cranial or spinal nerves.

In the latter class the inhibitory action will sooner or later be gravely affected, and the normal excito-motor conditions will speedily involve the organ upon which physiological action has exercised its paramount influence, that is to say, a patient, suffering, for example, from chronic rheumatism, will be apt to abort not only from chronic rheumatic endometritis, but from the central neural disturbance due to the blood deterioration. Neuralgia occurring in such a case may be facial or intercostal, but speedily becomes uterine, not from peripheral, but from central causes of irritation. A few hours after the commencement of an acute rheumatic neuralgia in the head and neck, sharp ovarian and uterine irritation is experienced; contractions, at first spasmodic, and then regular, sharp, and in muscular waves, accompanied by hæmorrhagic effusions, may very shortly terminate the pregnancy.

I have found that the successful control of neuralgia in pregnancy demands attention to one or two points. If the patient is anæmic, quinine given alone in 10-grain doses twice daily, or, still better, with a grain of opium with each dose, is best as an immediate sedative, and free doses of arsenical solution are most useful as inter-attack treatment. But when the patient is plethoric, especially if there is a gouty or rheumatic tendency, chloride of ammonium, 10 to 15 grains, every two, three, or four hours, with bromides of ammonium or sodium, opium, and aconite, or with veratrum, will answer best. Viburnum prunifolium is of the greatest value in some cases, and certainly ought to be given as soon as the uterine pains are felt. The Liq. Caulophyllum et Pulsatillæ Co. promises to prove valuable as a uterine and ovarian sedative, and might be given either alone, or with viburnum in lessened doses, as soon as acute pain has subsided. Other patients will do well with antipyrin, gr. xv., every two or three hours, or iodides and alkalies; and for some I conceive a course of baths at Kissingen, Kreuznach, Ems, or Wiesbaden, will do more good than any drug. But we must act promptly and dose liberally during the acute attack of neuralgia.—*Edinburgh Medical Journal*, February, 1889.

FRACTURE OF THE ISCHIUM.—P. A. SURGEON S. T. ARMSTRONG reports the following case:

Ben Olsen, æt. 38, a native of Norway, was admitted to the U. S. Marine Hospital, New York, on November 14, 1887. He stated that fourteen days previous to his admission to the hospital, while clearing a line on board his vessel, he slipped and fell into the hold, a distance of 10 feet. He struck on the floor beneath, with the right thigh extended and receiving the shock of the impact. He was unable to rise, and after being taken to his bunk the thigh commenced to swell; the mate applied kerosene oil to relieve this condition. By the eighth day after the accident the thigh had returned to its natural dimensions.

When admitted he was examined by Interne W. P. Spratling, who noted that a "thorough examination revealed no fracture of any portion of the femur or pelvis. There seems to be a deep-seated bruise of the gluteal muscles, and there is tenderness on pressure over the knee-joint."

On the 5th this note was made on the history sheet: "Patient can put almost normal amount of weight upon the foot while standing; the tenderness about the hip-joint is disappearing." The diagnosis of contusion of the thigh was made, though I understood that one medical officer who saw the case believed it to be an impacted fracture of the femur. On the 11th, the case having come under my charge, a very thorough examination was made, as the persistence of pain in the right hip seemed scarcely in consonance with a contusion. The usual manipulations of the thigh were made, forced flexion causing pain referred to the region of the head of the femur. Similar pain was caused by rotation outward. The pain was not sharp, as it would have been in case of fracture of the neck of the femur, nor was the foot everted when the patient lay upon his back; so any injury to the femur was excluded. Passing the index finger of the right hand into the rectum and feeling along the ramus of the right ischium, an unevenness was detected. When the thigh was flexed or rotated, motion could be felt at this point; the line of fracture was transverse. The patient was examined by the other officers on duty at the hospital and the diagnosis confirmed.

The patient was put upon his back, with support to the right leg to secure immobility. He was not very intelligent and was wilful, the nurse informing me that he would move whenever possible. In consequence, on the last of December motion was still detected at the site of fracture. He was allowed to sit up and walk with a crutch, as it was believed that the thigh would make extension on the bones and the motion excite the deposit of new bone. January 30 he was returned to bed, and on the 5th of March he was allowed to sit up, as there seemed to be bony union then.

The use of the lower extremity was regained very slowly, and when he dispensed with his crutches he had a decided limp on account of shortening of the leg. He was discharged from the hospital July 5.

All works on general surgery refer to this fracture as unusual. Gross (Surgery, vol. 1, p. 961) states that there may be either shortening or retention of natural length of the lower extremity. In Hamilton's excellent monograph on fractures he refers to the necessity of rectal, or in females of vaginal, examination. The history of this case, it is believed, will show the necessity of making a rectal examination in all cases of injury to the thigh where fracture of the femur is suspected but not present.—*Report of the Marine Hospital Service*, 1888.

AN INGENIOUS METHOD OF FORMING A SPHINCTER AFTER GASTROSTOMY.—To avoid the usual unfortunate and almost inevitable leakage from the artificial opening in cases of gastrostomy, GIRARD recommends the following procedure: Through a fifteen-centimeter vertical incision, the left rectus muscle is divided in its upper portion in the median line. The peritoneal cavity is then opened near the middle of the cut, and a wedge-shaped portion of the fundus of the stomach drawn out through the wound. A row of sutures is then introduced so as to include the posterior portion of the sheath of the rectus, the edge of the peritoneum, and the stomach-wall at the base of this protruding portion. These are to fix the stomach in the wound. An incision ten centimeters long and parallel to the original wound is now made on either side of the latter, so that two bundles of muscle-tissue of the size of a finger are formed. These bands are now crossed laterally, and the stomach drawn out through the sphincter-like opening thus made in the interval between them. The muscle-bands and gastric pouch are now fastened in place by sutures, after which the stomach is immediately opened. The author thereby hopes to obtain a sphincteric action upon the stomach-opening which shall be under muscular control, or, should the muscle-structure disappear, that the cicatrix itself, being pulled upon by the rectus, will accomplish the desideratum.

Girard performed this operation recently upon a patient, but as the case died before reacting from operation we cannot yet be sure of its utility. —*Wiener Med. Presse*, No. 25, 1888.

EXPERIMENTAL IODOFORM POISONING.—DR. A. V. KORIANDER, of St. Petersburg, has endeavored to throw some light on the vexed question of the suitability of iodoform for use as an antiseptic by poisoning dogs with it, and examining the morbid appearances post mortem. The iodoform was introduced into the peritoneal cavity in quantities varying from 0.3 to 1.5 gram

per kilog. of the animal's weight. The microscopic sections of the organs were stained by hæmotoxylin and lithion-carmine. Nephritis affecting the renal glomeruli was invariably found, and the liver was infiltrated by minute fat granules. These appearances are considered by Dr. Philipovich to be characteristic of iodoform poisoning.—*Lancet*, Jan. 19, 1889.

ACTION OF ACIDS AND ALKALIES ON DIGESTION.—These are some of the results of Jaworski's investigations upon the *action of hydrochloric, lactic, and acetic acids on the functional activity of the human stomach:* The mucus is precipitated; an increased biuret action appears, particularly after hydrochloric acid; an influx of bile usually follows large doses of acid; the secretion of pepsin is materially assisted, while that of the hydrochloric acid is but slightly influenced; 200 cubic centimetres of normal acid disappear from the stomach in seventy-five to ninety minutes; and long-continued administration of acids checks the normal secretion of hydrochloric acid. The action of alkalies on the digestive function appears to be to dissolve the mucus and hinder secretion of pepsin, whereas the acids precipitate the mucus and induce pepsin secretion. An increased secretion of hydrochloric acid, however, succeeds the disappearance of alkalies from the stomach. The prolonged use of either acids or alkalies in large quantities may lessen or even stop the secretion of hydrochloric acid; but carbonic acid, both as a gas and when dissolved in water, favors the secretion of both hydrochloric acid and pepsin, and consequently increases the digestive power of the stomach as well as its mechanical activity.

Certain inorganic salts, such as the potassic, sodic, and ammonic sulphates, and the potassic and sodic phosphates, markedly hinder tryptic digestion, especially the potassic phosphate.

In artificial digestion experiments it was found (Martin and Williams) that the presence of bile acids accelerated the amylolytic action of the pancreatic juice.

In the digestion of fats, bile alone is insufficient, and in rabbits the same has been found to hold good as to the pancreatic juice (Dastre). It would follow, therefore, that the simultaneous action of both juices is essential, bile promoting the absorption of fats, and pancreatic juice being the active agent in their decomposition.

In artificial-digestion experiments it is often very difficult to get clear filtration, owing to the presence of very finely divided matter in suspension. By vigorously shaking the fluid, however, with fibrous asbestos, the subsidence of the solid particles may be greatly assisted.

Ferments capable of converting starch into sugar, and of inverting cane-sugar, have been found in the healthy fæces of children and adults, and their presence probably shows that some action more important than the mere absorption of water occurs in the large intestine.—*British Medical Journal*, Dec. 29, 1888.

ACTION OF IRON IN CHLOROSIS.—Chlorosis is a form of anæmia apparently limited to females about puberty. Iron in this disease causes a great increase in the hæmoglobin, but as Hamburger and others have shown, very little of the iron is absorbed from the alimentary canal, it being taken up solely in the form of organic compounds, such, for example, as are formed in the processes of plant life. Further, that the total iron in the body amounts only to about 3 grams, an amount which is taken many times over during treatment. Possibly, as Bunge suggests, the iron is here of use by removing the excess of sulphur from the body; for in chlorosis due to excessive fermentation processes in the alimentary canal hydric sulphide is generated in large amount, and destroys the organic compounds of iron that go to form hæmoglobin. The presence of iron in the alimentary canal prevents this destruction going on. Landwehr, however, taking into consideration the limitation of chlorosis to the female sex, and to the period of puberty, is inclined to doubt this explanation. He is disposed, on the contrary, to regard the disease as one caused by an excessive development at this period of the substances containing animal gum required for the after nourishment of the embryo, and which acts injuriously on the hæmoglobin molecule. Iron precipitates this animal gum in the alimentary canal, and thus excess of it leaves the body in the fæces.—*British Medical Journal*, Dec. 29, 1888.

TREPHINING THE MASTOID PROCESS.—DR. MITZKUNA proposes a new locality for trephining the mastoid process. The ear is drawn forward, whereby a fold (of skin) is formed just behind the ear; under this fold a flat, bony prominence is felt; between this prominence and the base of the mastoid process is a depression, which is the place for trephining. The advantages of this locality are:

1. A chisel can descend from one-fourth to one-third of an inch with safety.

2. The transverse sinus, which takes a different course in different people, never touches this point.

3. The thickness of the temporal bone is greatest at this point.

4. The only drawback of this locality is the possibility of going through the external auditory canal, but this is nothing when compared with the possibility and danger of injuring the transverse sinus.—*Wiener klin. Wochenschrift*, January 17, 1889.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

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LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, FEBRUARY 23, 1889.

THE RELATION OF DRESS TO PELVIC DISEASE.

The questions as to the relations of dress to disease are assuming larger proportions, and taking a more healthy hold upon the minds of laymen; and as laymen become more interested in them, and ask for more knowledge, the more information must medical men have to impart, if they would take the position they should occupy as instructors of the public in preventive medicine. The readers of THE JOURNAL will remember the very interesting address of Dr. D. Hayes Agnew, at the last meeting of the American Surgical Association, on "The Relation of Social Life to Surgical Disease."

The most recent contribution to this subject is a paper read at the last annual meeting of the Michigan State Medical Society, by DR. J. H. KELLOGG, on "Experimental Researches respecting the Relation of Dress to Pelvic Diseases in Women." For many years it has been asserted, though on inaccurate and therefore unreliable data, that the modes of dressing in vogue among civilized women constitute an important etiological factor in the production of various forms of pelvic disease peculiar to the sex. Dr. Kellogg now contributes the results of some investigations that he has made; and it may be said that his opportunities for experimentation are excellent. He considers his results under five heads: 1. A comparative study of the function of respiration in civilized and uncivilized women. The means of investigation employed for exact comparison were the pneumograph and the kymographion, or recording cylinder. 2. Studies of the influence of respiration upon the pelvic organs, as shown by the tracings obtained by means of an inflated air pessary in the vagina connected with a recording tambour and cylinder. 3. Observations upon the influence of constriction of the waist upon intra-pelvic pressure as measured by a peculiar form of mercurial dynamometer, to be described in this paper. 4. Observations of the amount of external pressure exerted by a tight corset, tight bands, or other form of constriction of the waist, as recorded by the dynamometer. 5. Direct measurements of the amount of displacement of the uterus produced by constriction of the waist, the measurements being taken with an instrument devised for this purpose.

In regard to respiration in civilized and uncivilized women, it has been held for a long time that there are two distinct types of respiration in human beings, characteristic of the two sexes: abdominal and costal—and physiologists asserted that adult males breathe chiefly with the lower portion of the chest, while women breathe chiefly with the upper part of the chest. Nine years ago Dr. Kellogg wrote: "It is undoubtedly true that most women do breathe almost exclusively with the upper part of the chest; but whether this is a natural peculiarity, or an acquired, unnatural and depraved one, is a question which I am decidedly inclined to answer in harmony with the latter supposition, basing my conclusion upon the following undeniable facts: 1. In childhood, and until about the age of puberty, respiration in the boy and the girl is exactly the same. 2. Although there is a change in the mode of respiration in most females, usually soon after the period of puberty, marked by increased costal respiration and diminished abdominal or deep respiration, this change can be accounted for on other than physiological grounds. 3. I believe the cause of this modification of respiration is the change in dress which is usually made about the time of puberty. The young girl is now becoming a woman, and must acquire the art of lacing, wearing corsets, 'stays,' and sundry other contrivances which will aid in producing a 'fine form.' 4. I have met a number of ladies whose good fortune and good sense had delivered them from the distorting influence of corset-wearing and tight-lacing, and have invariably observed that they are capable of as deep respiration as men, and practice it naturally. I am thoroughly convinced that this so-

called physiological difference between man and woman is really a pathological rather than a physiological difference. In short, I believe that the only reason why women do not, under ordinary circumstances, breathe as do men, is simply that they cannot breathe naturally." Dr. Kellogg's many recent observations tend to confirm the views thus expressed.

Observations made upon Chinese women in San Francisco showed that in them there was nothing of the costal type of respiration; the abdominal breathing was as prominent in them as in males that lead sedentary lives. Observations made among the Yuma Indians showed no differences between the male and female respiration. The same results were obtained among the Chickasaw Indians. The tracing of the respiratory movements of a Scotch woman that had never worn a corset, given in Dr. Kellogg's paper, shows a decidedly abdominal type of respiration.

Physiologists have attributed the supposed female type of respiration to the fact of gestation. But Dr. Kellogg's observations with the pneumograph contradict this view. Respiratory tracings of *normal* women in the pregnant state show that the breathing is abdominal. In short, the whole matter may be thus summarized: "The so-called female or costal type of respiration, which prevails among civilized women, is the result of their restricting and unphysiological mode of dress, and is not due to the influence of gestation."

If it be admitted that the normal respiratory type in the female is the counterpart of that in the male, it must be evident that respiration in the female has an important influence on the pelvic organs. Illustrating this are some interesting tracings, made by means of an air pessary connected with a tambour, the movements being recorded upon a revolving cylinder. The facts of interest elicited by observations of the influence of respiratory movements upon the pelvic viscera are: 1. There is a normal movement of the pelvic viscera corresponding to the movements of respiration. 2. These movements are lessened by the constriction of the waist, inducing the costal type of respiration, as the result of two factors (*a*) the lessened movements of the diaphragm, and (*b*) the downward displacement produced by the pressure of the corset upon the abdominal walls.

By the use of an ingenious instrument of his own construction, Dr. Kellogg shows that constriction of the waist has a very marked influence upon intrapelvic pressure. He has found that the average pressure exerted at the waist by a tight corset or tight bands is, in ordinary respiration, about .3 of an inch of mercury. It was found, also, that the movements of the uterus up and down in ordinary breathing are from .1 to .3 of an inch. Coughing or deep breathing, straining, and other similar movements may increase this to .5 inch. By the application of the corset, or other constricting means, the uterus is lowered in the pelvis from .2 to .5 of an inch.

The more one studies humanity in the natural state, the stronger becomes the conviction that woman is not physiologically weak and prone to pelvic disease, and that the chief element in civilization that causes pelvic diseases in the female is the dress of civilized females. The student of zoology cannot admit that the human female alone is normally of a very different type, as regards one of the chief functions of animal life, from the male. And if there is something in our civilization that deforms and predisposes to disease the mothers of our men, the sooner we reform that something, and improve it out of existence, the better for the race.

MORE HOSPITALS THAN MONEY FOR THE SICK.

The last fifty years have been characterized, especially in Great Britain and this country, by a rapid increase in the establishment of voluntary hospitals for the sick and injured, particularly in the leading centres of population. It has been a period of great activity and advancement in all departments of medical science and practice, giving birth to and rapidly multiplying so-called specialties; and each specialty in turn has demanded hospital, infirmary, or dispensary accommodations for its own class of patients. These demands have generally found a sufficient response from the religious and charitably-disposed citizens to cause the building and furnishing of hospital after hospital, and free dispensaries of every grade, but nearly all left for support to the annually recurring demand for increased contributions. The result reached at present is, for the large cities of Great Britain and the United States, an average of about one hospital bed for every five hundred of the population, and free dispensaries

furnishing medicines and medical advice, not only to all the really out-door poor, but also to a very important percentage of those who are perfectly able to pay reasonable fees for such medical services as they need. On the other hand, notwithstanding all the devices for raising money that human ingenuity has been able to invent, including charity balls, church festivals, hospital Sunday collections, mimic theatricals, variety fairs, etc., nearly all these voluntary institutions ostensibly dedicated to the relief of human suffering are found in debt at the close of each financial year.

DR. SUTHERLAND, who has recently written an interesting series of papers concerning the condition of the voluntary hospitals of Great Britain, gives the following statistics concerning the voluntary hospitals of England, Scotland, and Ireland, not including the infirmaries sustained by the poor-law rates. Dublin has one hospital bed to every 140 of the population; Belfast one to 380; Edinburgh one to 410; London one to 420; Birmingham one to 700; Sheffield one to 830; and Leeds one to 1,020. In Glasgow there are 1,057 beds daily occupied in the voluntary hospitals at an annual expense of $220 per bed, while there are 1,169 beds daily occupied in the hospital supported by the poor-law rates at an annual expense of only $115 per bed. The annual deficit in the working expenses of the voluntary hospitals of the last-named city is stated at $45,000. And the *British Medical Journal*, for February 2, 1889, in stating the foregoing facts, adds that, this impecunious state of the voluntary hospitals in London is still worse.

The same evils, though possibly in less degree, exist in this country. If we include the Cook County Hospital with the voluntary hospitals of all classes in this city, we have at least one hospital bed to every 450 of the population. Omitting the County Hospital, there would be in the hospitals dependent largely upon voluntary contributions, one bed to every 600 of our population. And still there are hardly less than half a dozen more hospital projects being urged upon the attention of the community, most of them with more zeal than wisdom. There are questions of great importance relating to the proper management of the poor, and of the sick poor especially, together with the relations of medical men to them, that have occupied much of our attention through a long professional life; and concerning which we have been deterred from writing only from want of time. But no other questions are more worthy of the attention of the wisest members of every community than these.

EXPERIMENTAL DIABETES.

MM. GERMAIN SÉE and E. GLEY have recently made a report on this subject to the Académie des Sciences. Thus far all attempts to produce diabetes in animals have failed—at least such forms of diabetes as are seen in the human subject. It is well known that irritation of the central end of the vagus nerve gives rise to hyperglycæmia and glycosuria. The experimenters have succeeded in producing permanent irritation of the central end of the right pneumogastric in dogs, and several of the animals have presented not only glycosuria, but true azoturia with notable and rapid emaciation. But this is only one of the elements of diabetes. Dogs have been made glycosuric also by being given daily a quantity of phloridzin. After the first day the urine of these dogs contained, for twenty-four hours, from 10 to 12 per cent. of glucose. The glycosuria ceased with the stoppage of the administration of phloridzin. This experiment confirms a similar one made by von Mering. But phloretin, one of the products of the breaking up of phloridzin, causes scarcely 1 per cent. of glucose to appear in the urine. It is evident, then, that phloridzin does not cause glycosuria by its radical phloretin. In whatever way the dogs were fed, under these experiments, the urine still contained sugar. This fact is interesting, since, as all the glycogenic material of an animal to which phloridzin is given is very rapidly destroyed, as von Mering has shown, it is evident that glucose may be formed in the organism at the expense of the albuminoid and fatty matters.

It was observed that an animal under experiment became voracious, and, unless subjected to "forced feeding," emaciated rapidly. From this it would appear that glycosuria accompanies, in a measure, polyphagia. Glycosuric animals were subjected to the various methods of treatment of diabetes. The two methods of treatment by bicarbonate of soda and by arsenic were inefficacious. The administration of bromide of potash caused a slight diminution in the amount of sugar. The most marked diminution of glycosuria was

obtained by the administration of antipyrin. Lépine and Porteret have recently shown that antipyrin retards the transformation into glucose of the glycogen of the liver and muscles. M. Sée has used antipyrin in some cases of diabetes, and obtained very good results. Since the general action of antipyrin is to diminish excitability of the nervous system, may it not be, ask MM. Sée and Gley, that diabetes tends to an exaggeration rather than to a retardation of nutrition.

EDITORIAL NOTES.

THE RUSSIAN MEDICAL CONGRESS, which was opened in St. Petersburg on January 15, and continued seven days, is said to have been a great success. It was held under the Presidency of Dr. Erissmann, Professor of Hygiene at Moscow. The number in attendance was 1500, against 1000 at the second congress, and 500 at the first. The congress was divided into eighteen sections, and a very large number of papers was read. An exhibition, which remained open for three weeks, was a very interesting feature of the congress.

A NEW SOURCE OF COW-POX has been recently been discovered by the Vaccine Committee of Milan. The animal was "covered," says a French exchange, with a confluent eruption, and in a few days a cow inoculated from it. The inoculation took well. This is the seventeenth time that the Milan Committee has found a natural source for vaccine virus.

THE FUNCTIONS OF THE BRAIN have been still further studied by GOLTZ. He has destroyed extensive areas of the cerebra of dogs without killing the animals, and in one case a dog lived five months after the whole of the left hemisphere was removed, but showed modifications of character and mental enfeeblement. Goltz advises surgeons to be more bold in cases of cerebral tumors.

"LAVAGE" OF THE BLOOD has been experimented upon by DASTRE and LOYE. Considerable quantities of a physiological saline solution may be injected into the veins of an animal without causing apparent trouble. The quantity used may be as much as two-thirds the weight of the animal (rabbits), but the solution should not be introduced faster than 3 ccm. a minute, and 3 ccm. to the kilogramme of weight of the animal; furthermore, the organs, especially the kidneys, should be healthy. When the solution is introduced too rapidly, and the organs are not healthy, exudations take place into the serous cavities, and there is exophthalmos, suffusions of blood, and exudations into mucous membranes. The urinary secretion bears a constant ratio to the amount of fluid injected, when the kidneys are healthy. The experiments show the existence of a physiological balance between the circulatory and the serous systems. Analyses show that when the animal has returned to the normal condition the injection of a physiological saline solu- has had no other effect than that of washing out the blood.

A NEW COLD INDIA-INK INJECTION, described by TAGUCHI, permits examination by transmitted or reflected light. The coloring matter is not altered by light nor by chemical agents; the particles of carbon have no action on the tissues; and the coloring matter adheres to the walls of the vessels, and does not fall out of small sections. The specimens may be hardened in any reagent without change of color. They may be examined in the fresh state in glycerine, or may be colored by any desired reagent. The injecting liquid is prepared by grinding India-ink in water in such manner that a drop placed on blotting paper does not spread.

DR. JOHN C. DALTON, of New York, long known as one of the most eminent teachers and writers in the department of physiology, died at his residence in New York City on the 12th of February, 1889, aged 64 years.

ANTISPASMODIC ACTION OF ANTIPYRIN.—In the January, 1889, number of the *University Magazine* DR. E. T. BRUEN calls attention to the value of antipyrin as an antispasmodic. The drug modifies pain in neuralgia and certain forms of headache. Sonnenberger and others have used it in pertussis, and claim that it greatly reduces the number and severity of the paroxysms, very early in the disease. Dr. Bruen concurs in this opinion. He directs attention also to the efficacy of antipyrin in allaying spasmodic cough in cases of influenza with bronchial catarrh, and in some cases of subacute bronchitis. These cases almost always present, in the interscapular region, the

signs of enlargement of the bronchial glands. This enlargement causes pneumogastric irritation, and thus tends to produce spasmodic cough similar to that of pertussis. Two grains of antipyrin, given every three or four hours to an adult, or twelve or fifteen grains a day, will often modify the paroxysmal cough. The drug may be suspended after two or three days, and again resumed if the symptoms return. The paroxysms of some cases of asthma, and the severity of the symptoms, are reduced by antipyrin, given in 5 grain doses until 25 grains are taken—especially in cases in strong, robust men. In the painful period preceding the menstrual flow, says Dr. Bruen, antipyrin is again a useful drug. A 5 grain dose should be given, and repeated in half an hour. This effect is satisfactory until the system becomes habituated to the drug, when antifebrin may be a useful substitute, in one-half to one-third smaller doses than antipyrin. When administration by the mouth fails, enemata of from 15 to 30 grains of antipyrin may be used during menstruation in cases of dysmenorrhœa. The large dose, 30 grains, has been used by Windelschmid, but Dr. Bruen has not used doses of more than 15 grains.

THE USE OF YEAST in therapeutics, while not new, is recommended for scurvy by HEER, who treated 800 scorbutic patients with it, of whom but two died. The mortality of other scorbutic patients (prisoners), not treated with it, was much greater. Heer attributes to it some action on the fever and the course of the disease. Under its use the temperature fell from 41° to 38° C. in twelve hours.

SOCIETY PROCEEDINGS.

Philadelphia County Medical Society.

Stated Meeting, December 12, 1888.

THE PRESIDENT, J. SOLIS-COHEN, M.D., IN THE CHAIR.

DR. JOHN H. PACKARD read a paper on

NOTES OF A SUCCESSFUL CASE OF LAPAROTOMY FOR INJURY BY A CIRCULAR SAW.

Charles Brown, æt. 12 years, was brought to the Pennsylvania Hospital, September 24, 1888, having fallen against a circular saw in rapid motion. The accident occurred about one mile from the hospital. On his admission, the ascending colon and about two feet of the small intestine were protruding from a wound four inches or more in length, nearly vertical, on the right side of the belly, some two inches from the middle line. The mass was tightly grasped in the wound, so that access of air to the peritoneal cavity was prevented. The boy was in a condition of marked but not excessive collapse. He was etherized, and the parts antiseptically cleansed. The bowel was then carefully examined. Three wounds of the intestinal wall were detected; one involving the entire thickness, the other two the peritoneal coat only. At several points the omentum had been wounded, and the mesentery was cut in two places. The boy's woollen clothing had been torn by the teeth of the saw, and a great many minute shreds of the stuff deposited on the surface of the protruded mass. The three intestinal wounds were carefully sutured with very fine silk, after the method of Lembert. All the bleeding points were secured with fine carbolized catgut. Some ragged portions of omentum were similarly tied and cut off. Attention was next given to the cleansing of the peritoneal surface from all the bits of woollen threads deposited on it; a very tedious process, occupying more time than any other part of the operation. In order to return the protruded mass it was necessary to enlarge the wound somewhat; after which reduction was accomplished without difficulty. After irrigation of the peritoneal cavity, the edges of the wound were brought together with silkworm-gut sutures, secured by shot. A glass drainage tube with a closed and rounded end was inserted, and the usual antiseptic dressings applied, with a flannel over all. Every two hours the cotton rope filling the tube was removed, and suction was made with a hard-rubber syringe with a long nozzle, so as to prevent any accumulation of secretions. Reaction took place very favorably; the boy had only very slight pain, but some nausea and vomiting. The nausea and vomiting continued all next day, subsiding toward evening. A free movement of the bowels occurred, and I learned later that an attendant, just after the boy's admission, had given him by mistake 10 grains of blue mass, intended for another patient. As soon as the stomach became quiet, the administration of prepared milk and beef-tea, alternately every two hours, was begun.

On the 28th (the fourth day) there was only a slight yellowish discharge from the tube.

29th. The glass tube was removed, and a soft rubber one substituted for it. Solid food (milk toast) was given.

30. He ate an egg and some chicken-broth. A day or two after this the tube was removed, and a few days later the sutures. For some two

weeks after this the boy was kept in bed; he was allowed first to sit up in bed, and then to get up and walk about. On October 31st, thirty-seven days after the injury, he walked into the clinic-room; and on November 12th he was discharged, with directions to wear a binder for some time, and to report to us before dispensing with it.

I should have mentioned that, after the spontaneous movement of the bowels on the second day, an enema of turpentine and sweet oil was administered about every third day until his dismissal.

Certain features of this case may be briefly commented upon. The boy's youth was, of course, in his favor. He was stout and healthy, although his surroundings had not been, by any means, hygienic. But there was one circumstance of special advantage—the fact that the protruded mass quite filled up and plugged the wound in the abdominal wall. Besides this, the wounds were all of small extent, and no large vessels were divided. The presence of the almost innumerable shreds of soiled woollen clothing on the peritoneal surface was of course an element of danger, only to be set aside by the utmost care and patience in their detection and removal.

DR. JOSEPH PRICE: The fact that the protruding intestine completely closed the wound had a great deal to do with the successful result in this case. We know that undue manipulation and prolonged and needless exposure of intestine are frequent causes of shock and death this fact is beautifully illustrated in needlessly prolonged operations. I never could understand the vicious do nothing policy of ambulance surgeons in these cases of abdominal incised wounds. The ambulance surgeon should be prepared and instructed to act promptly in such accidents. Promptitude is everything. A pitcher of warm water and a few threads might save lives that are lost by carrying the patient untreated, with the intestines exposed, covered by filthy clothing to the distant hospital, there to wait for the chief to arrive before anything is done. I recently read of a case of a man who was accidently eviscerated while hunting alone in the backwoods. Someone found him with the intestines protruding and covered with dirt, and carried him to the nearest brook, washed and sewed him up. He was also fortunate in *being away from opium* and from meddlesome nurses and officious residents of a general hospital, and he recovered. The strictest simplicity, absence of opium and of milk, indeed of all food till the patient asks for it, in except in greatly exhausted cases demanding early support or stimulation, will give the happiest results. I give plenty of fluids, toast water, barley water, stimulating enemata of beef-tea, with, perhaps, a little whisky if needed, and enemata of water to relieve thirst. We know how difficult it is to prevent hæmorrhage in ether nausea. Careful preparation for the operation by the free use of salines will minimize the ether and bowel disturbance. I am satisfied that the free use of the salines is of greater importance *before* operation than after in abdominal work. The unintentional administration of blue mass in this case of Dr. Packard's was a happy accident and helped recovery. I wish particularly to congratulate Dr. Packard upon the excellence of the toilet, the care to secure perfect cleanliness under such difficult conditions, and the perfect drainage. The careful removal of all foreign material from the bowel, free irrigation, and perfect glass drainage in two desperate cases has given him a triumph in two cases of adominal work.

DR. PACKARD: I must say a word in reply to Dr. Price in defence of "my friend opium." You remove a tumor; all goes well until water is injected into the abdomen. Pain ensues immediately. You give a grain of the extract of opium by the rectum, when the pain disappears, the patient goes to sleep and wakes in comfort. Are you not justified in attributing this to the opium, and relying upon the same measure in similar cases? Of course it would be a great mistake to treat all cases of peritonitis with opium. The saline treatment is proper in suitable cases, and saves many lives. So we may say of opium in suitable cases. The error is in exclusiveness, whether in the one direction or the other. We must use our judgment in individual cases, and prescribe in view of all the conditions present. In this case I think nothing would have served my patient as the 1 grain of the extract of opium did. It was not a case of peritonitis however, and I did not so regard it. But suppose some enthusiast in salines had ticketed the case peritonitis and immediately administered purges, I hardly think such prompt relief would have been afforded. I would like, while on this subject, to mention a measure which I have employed for many years, and which has repeatedly seemed to me to avert threatened peritonitis, and that is the application of a dozen leeches to the abdomen. After operation for stone especially, as well as in other cases of traumatism, marked benefit has been derived from the adoption of this plan.

DR. JOHN H. PACKARD read a paper on

TUMOR PROBABLY OF UTERINE ORIGIN, ATTACHED TO THE SMALL INTESTINE, REMOVED BY LAPAROTOMY.

For the following notes I am indebted to the kindness of Dr. L. I. Blake, resident surgeon to the hospital. It is due to him also that I should acknowledge his skill and attention in dressing and caring for this patient.

Kate M., native of Ireland, æt. 26, domestic, single. Admitted to St. Joseph's Hospital November 13, 1888. Family history good. Per-

sonal history also good, with the exception of an ill-defined attack she suffered from three years ago, probably resembling in some points the present one, and which was pronounced by her physician at that time to be intestinal inflammation of some sort. She had been examined by two physicians before admission into the hospital. The first stated that she had inflammation of the womb, while the second led her friends to believe that she was pregnant.

On admission, she stated that she had been suffering for three weeks, getting worse gradually. On examination her abdomen was found to be enormously distended, and exquisitely tender to the touch. Constant pain was felt throughout the greater portion of the trunk. Temperature 101° F.; pulse 100 and moderately strong. This being neither history of traumatism nor marks of violence, a vaginal examination was made, but no abnormalities noted. Her menstruation was established at 15, and has always been regular. When pain was sufficiently relieved to permit manipulation of the abdomen, distinct fluctuation was elicited, and in the left ovarian region was an area of dulness, which, though slightly variable, was not obliterated when the patient was turned on the left side. Deep pressure on this spot detected a hard mass which receded from the touch, but returned, the hand being kept in position. Owing to the extreme tension of the abdominal walls it was impossible to ascertain anything as to its nature or attachments. The tympanities and ascites failing to respond to medicinal agents, the patient growing weaker, and at the end of three weeks the respiration being interfered with, an exploratory incision was decided upon.

The patient peing in tolerably fair condition, the operation was performed by Dr. Packard on Saturday, December 8. The peritoneum was found to be very much thickened and congested, its appearance being scarcely distinguishable from that of intestine. After removing five or six quarts of clear serum from the peritoneal cavity, the incision was enlarged, revealing a growth attached to a knuckle of intestine in the lower segment of the abdominal cavity to the left of the median line. This tumor, a little larger than a fœtal head, was hard and dense in structure, weighing one and a half pounds; encapsulated and attached by a narrow pedicle, little more than an inch in breath, which seemed to be a redundant portion of the capsule thrown around almost the entire circumference of the intestine. This was carefully dissected away from the intestine, and all bleeding points ligatured. The peritoneal cavity was irrigated thoroughly with a solution of the bichloride of mercury, 1 part to 15,000 of distilled water. The peritoneum and abdominal walls were sutured separately, the former with catgut, the latter with silk-worm gut. A glass drainage tube, perforated and closed at the bottom, was placed in Douglas' pouch, and the wound closed and dressed.

The operation was done under full antiseptic precautions. The patient showed considerable shock after the operation, from which she rallied slowly. It was accompanied by persistent vomiting, which was relieved by one drop of creasote every two hours, administered in syrup of vanilla. A peculiar temperature was exhibited during this period, the same thermometer registering successively in the mouth $96\frac{3}{5}°$, in the axilla $97\frac{4}{5}°$, in the rectum 101.° During the first twenty-four hours there was not sufficient discomfort or restlessness to call for anodynes. Up to this time, about six ounces of bloody serum had been drained from the cavity. Four ounces of warm distilled water were then injected through the tube, and allowed to remain four or five minutes. Since that time, during the last seventy-two hours, not more than three ounces of serum have been removed, and scarcely tinged with blood. A short time after the warm water was removed, the patient complained of sharp, shooting pains, with marked tenderness over the abdomen. These became so severe as to require a suppository of opium (one grain), which soon induced a quiet sleep, with no return of pain on waking.

Thirty-six hours after the operation a slight but persistent cough was developed, probably due to hypostatic congestion, since change of position gave relief. During the last three days the temperature taken in the mouth has not risen above $100\frac{2}{5}°$, the pulse varying from 90 to 100. Ever since the operation the patient has evinced a strong craving for food, giving milk the preference above anything else.

[The subsequent progress of this case has been very favorable. On the 11th of December (the sixth day) the glass tube was removed, and a soft-rubber one substituted, until the 17th, when it was dispensed with. On this day she had a spontaneous and quite natural movement of the bowels. Suppuration occurred in the suture tracks, probably from insufficient preparation of the silkworm-gut used. On the 24th of December (the sixteenth day) she was allowed to sit up in bed, the wound being quite healed.—P.]

DR. OSLER: I agree with Dr. Packard as to the pathological nature of the growth, and the possibility which he mentions is quite well recognized. An interesting feature of the case is the association of peritoneal effusion with solid growths in the abdomen. I have on several occasions been asked to see cases of ascites which depended upon the presence of tumors of ovaries or uterus.

Gynæcological Society of Chicago.

Regular Meeting, Friday, Nov. 16, 1888.

THE PRESIDENT, CHARLES T. PARKES, M.D., IN THE CHAIR.

DR. A. REEVES JACKSON read a paper on

SOME UNCURED CASES OF UTERINE HÆMORRHAGE.

I desire to report the histories of some of the cases in which I have failed to cure a rather frequent ailment—uterine hæmorrhage.

Case 1.—Mrs. F. W., first consulted me on July 7, 1884. She was 28 years old, and had been married two and a half years; no pregnancy. Menstruation commenced a the age of 16, and had always been regular and in every way normal down to the time of marriage. After that event, a period occurred at proper time. The patient then missed two periods. After lifting a heavy weight, a flow of blood appeared and continued for several weeks. She visited Dr. Wm. Goodell, of Philadelphia, who curetted the uterus in May, 1883. I do not know what, or whether anything, was removed, but the patient considered herself well for four months. In the following autumn, two periods were again missed. After a trifling misstep a red flow began, and continued about one-half of the time for nine months; then I saw her. She was a large but not tall woman, weighing 162 pounds, of dark and rather dull complexion, and habitually despondent temperament. There was no history or present evidences of any disease of important thoracic or abdominal organs. The pelvic viscera were found to be entirely normal in size and position. The os uteri was rather small, but of virginal shape, and free from redness or erosion.

On July 9, I administered ether, and curetted the uterine cavity. A few fungous granulations were removed, and an application made of Churchill's iodine solution. This latter was repeated every four to seven days. For about three months menstruation appeared at intervals of four or five weeks, rather profusely, and lasting from seven to ten days. Then the inter-hæmorrhagic periods became shorter—about three weeks. During the spring of 1885, the intervals were about two weeks; once, only nine days intervened. In the early part of 1886, the flow was more irregular, recurring every three to six weeks. In July, however, it appeared after an interval of two weeks and lasted three weeks, not profusely but constantly. In August following, I again used the curette, without any result. Nothing was removed, and no change was produced in the symptoms. In June, 1887, the same operation was followed by a like negative result. A month later, my connection with the case ceased. During the time of my attendance (which was not continuous, but interrupted sometimes for periods of several months) the treatment consisted in efforts to overcome habitual constipation, and the intra-uterine application of iodine, carbolic acid, a solution of ferric alum, etc. These applications were always preceded by the introduction of a No. 12 bougie. There were two unfavorable conditions present in this case which I could not obviate. The one was tight-waist dressing, and the other an insuperable objection to active exercise.

Within the past few days the husband of this patient called upon me and stated that the subsequent history of his wife presented no material change; that, at times, she seemed better, and then became worse again. She is now under the care of a prominent physician of this city, and is thought to be improving.

Case 2.—Mrs. E. D., placed herself under my care January 22, 1885. She was a Jewess, had been married three years, and was never pregnant. Menstruation began at 12, had never been distinctly regular, and for many years was rather scanty. During the past year, however, the discharge had recurred with greater frequency than ever before, the interval being less than four weeks, and it had become shorter and shorter, while at the same time, the quantity of discharge at each period had steadily increased. During the month immediately preceding my first interview with the patient, there had been three attacks of flowing.

In personal appearance, this patient was noticeable and rather peculiar. She was of medium height, and much too stout to be termed plump. She had the very dark and abundant hair which is characteristic of so many of her race, and there was a marked growth of hair upon her upper lip, on her face from the temporal regions to the chin, and on her neck.

Interrogation failed to elicit any evidence whatever of cardiac, pulmonary, hepatic or renal disorder. The patient ate well, slept well, and felt well. She was only annoyed by the frequency of the bloody flow. A pelvic examination revealed no abnormal condition, position, or shape of any of the organs. The single disordered symptom discoverable consisted in a discharge of dark blood which was seen slowly oozing from the os uteri. The introduction of the sound was easily accomplished, and was followed by a rather profuse flow of redder blood.

Two days later, under ether anæsthesia, the cervical canal was moderately dilated, and the interior of the uterus curetted. A small number of fungosities were removed and the uterine cavity swabbed with Churchill's iodine solution. On February 20, a bloody discharge appeared, and continued more or less profusely until March 14—three weeks. I then made an application of Monsel's solution of iron. The discharge ceased

for two days; it then reappeared and lasted to March 23—seven days. I again dilated the cervical canal and passed in a curette, without removing anything, and applied the iodine solution. There was no discharge for eight days subsequently. Then a flow which seemed like that of menstruation appeared. It lasted five days, ceased two days, reappeared and continued with occasional intervals of one or two days until April 23, when it became profuse and seemed like menstruation again. After a few days the flow diminished, but a reddish-tinged oozing continued nntil a more profuse flow indicated the return of catamenial discharge. On November 9, the patient reported that the longest time she had been free from bloody discharge was four days.

During all that time I had availed myself of frequent opportunities of making local applications of iodine, carbolic acid, Monsel's solution, alum, fused nitrate of silver, etc. Also, I had given quinine, ergot and viburnum, and on several occasions I had gently dilated the cervical canal, and tried to get away something with the dull curette.

No especial change was noticed in the symptoms in the summer of 1886, during which time all treatment was suspended. In January, 1887, the patient informed me that once only she was free from hæmorrhage for a period of three weeks. Treatment was then resumed. I introduced a tupelo tent and followed the dilatation by a very thorough application of iodized phenol. This was repeated at intervals of five to seven days for several weeks. There was no improvement. Then, I tried nitrate of silver for awhile, but the hæmorrhage continued. In the summer of 1887, the patient went to Europe with her husband, and for a few weeks while there she was somewhat better. In the following autumn, however, after her return, the hæmorrhage was as constant as before. On December 23, I dilated the uterine canal mechanically under anæsthesia, and removed two large granulations. She died one week later of peritonitis.

Case 3.—Mrs. W. L., æt. 35 years, had been married seven years, and had two children, the younger being 16 months old. I saw her on September 5, 1885. When the baby was 10 months old, menstruation appeared, and for two periods was quite normal, lasting four days. The third came a week to soon and lasted two weeks. After an interval of two weeks it again appeared, and when it had persisted ten days, necessitating two or more napkins daily, she applied for relief. She then showed effects of the loss in pallor, impaired strength, and enfeebled digestion. The baby was weaned, and the patient took strychnia, quinine, and arsenic. I found no pelvic cause for the hæmorrhage unless it might have been a slight degree of subinvolution. The uterus was freely movable, in normal position, free from erosion, and there was no swelling or undue tenderness in the region of the ovaries, tubes, or broad ligaments. Constipation was present, and I prescribed salines and a regulated nutritious diet. Subsequently, the hæmorrhage continuing more or less constantly, although not profusely, other means were tried, many of them rather empirically. They included ergot, hydrastis, viburnum—all without perceptible effect. Then I dilated the cervical canal and explored the interior of the uterus with finger and curette. Nothing was found.

After about eight months, the patient placed herself under the care of an electrician, who treated her for nearly six months. Then she went to Cincinnati, and remained several months under the care of a distinguished gynecologist. She returned to me in January last, and stated that she had not at any time been more than ten days without a bloody discharge, and rarely more than three days. The menstrual periods were distinguishable by the more profuse flow which marked their presence, and they were fairly regular.

Once more I dilated the cervix under etherization, and drew a curette over every part of the intra-uterine surface, taking especial care to get the instrument into the cornual depressions. No tissue was brought away, and very little blood. I subsequently made internal applications of tinct. iodine, tannin, Monsel's solution, and once, at the close of what seemed to be a menstrual period, I applied nitric acid. While, at times, there was a diminution of the discharge, the improvement was only temporary, and in July last she again passed from my care.

Case 4.—The notes of the following case were kindly furnished me by Dr. J. H. Stowell. M. M., a single woman, 25 years of age, was born in Canada. Menstruation began at 12, and was quite regular until she was 19; then the flow became prolonged, lasting sometimes five or six weeks. This was followed by regularity, both in quantity and times of recurrence for a few months, when menorrhagia again appeared. At the age of 22 she was examined by a physician at Ottawa, who curetted the uterus, with what immediate result is not known, but the patient was free from all sanguineous discharge during a period of three months. Menstruation then returned and was regular and in every respect normal for the following four months. Becoming menorrhagic again the curetting was repeated, with the same temporarily beneficial results as before. Again, after a few months, the flow became profuse and a third curetting was made six months after the second, the latter time without apparent benefit.

The patient removed to this city and came under the care of Dr. Stowell, with whom I saw her in the early part of the current year. On January 21st, after thorough dilatation of the uterine

canal, I curetted very carefully, removing a small number of granulations. The operation was followed by the application of Churchill's iodine. For two months subsequently there was no bloody discharge. Then it reappeared, and Dr. Stowell informs me that he has continued to treat the symptom in a routine manner locally and generally, but without satisfactory result. Latterly this case presents a curious feature: the flow is very profuse every alternate month, and normal the other. Within the past fortnight this patient has been placed under the care of a gentleman skilled in the application of electricity, in the hope that she may be benefited by that remedy.

It will be observed that in the foregoing cases there were some features common to them all. Thus, in none of them did the hæmorrhage take the form of rapid, profuse flow suddenly exhausting the patient, as we not infrequently notice in cases which the discharge depends upon an abortion, or upon the presence of cancer or fibroid neoplasm. On the contrary, the evil effects produced were the result rather of the persistence of the discharge covering long periods of time. Again, in none of them was there evidence of disease of the lungs, heart, liver, kidneys, or other important organs causing a depraved condition of the blood or pelvic plethora. In none of them was there a history of hematocele, pelvic inflammation, or detectable pelvic swelling. In none of them was there any displacement or flexion of the uterus, or dislocation of the ovary. Indeed, in none of them could I determine a sufficient local or systemic cause. I have thought that possibly some such cause might exist in disordered condition of the Fallopian tubes or pelvic cellular tissue not ascertainable by our present known methods of investigation.

Being aware of the influence of malarial poison in producing congestion of the abdominal and pelvic viscera, including perhaps the mucous membranes, I have not failed to take this possible etiological factor into consideration and to make careful inquiry with the view of ascertaining its existence. The result in each case was wholly negative.

My object in reporting these cases is twofold: first, to ascertain whether others besides myself have met with similar baffling experiences; and, secondly, to obtain such practical hints in the treatment of such cases as may hereafter lessen the number in which we have to acknowledge defeat.

DR. D. T. NELSON: I do not know that I can say very much to assist the doctor in the treatment of his cases, for that is evidently what is intended and what we should all need under the circumstances. I cannot say that I have seen just such cases; I only regret that the doctor was not able to follow the cases even longer. One died; I would like to know if there was any post-mortem examination. Perhaps the cause of death was such that it would hardly be satisfactory if there were a post-mortem. It seems to me that the only way we can arrive at a conclusion as to the nature of the disease and consequently the proper method of treatment, is to follow them longer. One case that I have seen—and there is but one that seems to me at all like these the doctor has reported—I was fortunate enough to see one or two years after a somewhat similar experience by other gentlemen, in which nothing was reported to have been found; in which there was curetting; but as I saw it subsequently there was plain evidence of fibroid tumor. Perhaps if these cases were seen longer or examined post-mortem there would be a satisfactory explanation of the persistence of the hæmorrhage. I think one of the small single or multiple fibroid tumors, which cannot be detected by the most skilful finger, or by any means of examination that we have at present, are likely to produce such results, and I believe they may lie dormant for a longer period than these cases have been observed; I am quite sure that I have seen them—and eventually, perhaps of their own nature, develop so as to be found; perhaps from some exciting cause other than that. There is another cause, it seems to me, for these hæmorrhages, concerning which I can hardly speak rightly. I believe the writer of the paper is better able than any of us to talk on that subject, and I hope he will give us some information in that direction when he closes his remarks; namely, will disease of the Fallopian tubes produce hæmorrhage from the uterus? I do not mean by that a salpingitis that will fill the tube with pus or serum, and be so large as to be easily felt, but actual disease of the mucous membrane, perhaps not extending much deeper than the mucous membrane, but capable of producing a continuous hæmorrhage. I confess to being unable to point out a case in my experience, or in that of others, that is plain, but I simply throw it out as a hint, as a possible explanation, for further examination. Perhaps it is not a parallel case, and yet it seems to me that there is a similar cause. A woman after menstruation, if you please, a week after the cessation of the menstrual period, takes cold, has a slight cough, has a traumatism or some slight disturbance in the pelvis giving pain and other evidences of inflammation; we all know that one of the most common symptoms attending upon the pain, etc., is hæmorrhage from the uterus. Not a severe one, perhaps, but a slight flow. You may say that means congestion of the whole pelvic viscera. True, it ordinarily does. But what does produce the uterine flow? Is it the uterus alone, is it the ovaries alone, is it the broad ligaments only, is it the Fallopian tubes and the uterus, is it the Fallopian tubes only? It does seem to me in some instances that it is not only the uterus, not only

the broad ligaments and vascular structures about the uterus; but that the Fallopian tubes and ovaries have very much to do with this condition. But the reader of the paper is able to enlighten us more than any one else in that direction. I believe if these cases were observed long enough, we should find a congestion of the uterus produced by a fibroma or sarcoma, or disease of the Fallopian tubes or ovaries, and pre-existing disease of the ovaries and tubes produce hyperemia of the uterus that favors the development of fibroma and sarcoma.

DR. C. T. PARKES: I should like to mention a report I have recently read in one of the foreign journals that applies somewhat to this question. A case was reported in which all these remedies were used; curetting and intra-uterine dilatation, and finally the surgeon concluded he would make an abdominal section. After making the section he found what he reports as a cavernous angioma of one of the ovaries. It was removed and the case cured.

DR. ROBERT TILLEY: It is my special interest in the last case reported by Dr. Jackson that has given me the honor being present this evening. I would like to correct a single remark towards the close of the case, namely, that the patient was placed under a gentleman skilled in electricity. The patient came to me for general counsel as to what would be the best course for her to adopt under the circumstances. I advised her to get letters from the doctors who had been in attendance on her and to send them to her parents, with the supposition that they would consult with the family physician who had previously curetted the uterus. Meanwhile, she was flowing considerably, and asked me if I would not give her such general instructions as would enable her, at any rate, to be freed from a certain amount of anxiety which she would necessarily be under apart from that. I said that under those conditions I would, with the understanding that if any serious symptoms developed I should not think of taking charge of the case. At this time I considered the question of recommending them to try the application of electricity to the interior of the uterus, and I thought seriously of recommending it strongly; but looking back upon my own experience with reference to electricity, I did not feel at all confident under the very indefinite conditions which the case presented, and I meanwhile thought it desirable to use such hæmostatics internally as would be suggested. In looking over the field, I concluded that without any doubt whatever ergot and iron had been used as fully as it would be desirable to use them, and the first thing I thought of was the common remedy of vinegar. I administered the vinegar for two or three days without any advantage whatever, internally; I then descended, perhaps I might say, to the use of hamamelis, and in order to get the genuine article, I recommended Pond's extract. This did not have any influence at all. There seemed, however, to be a sort of periodic character about it, and I used quinine for a few days, without any advantage; and, in fact, it seemed to me from the report that the flow became greater. Then I resorted to turpentine, 10-drop doses in an emulsion, and after she had taken two doses of this turpentine there was a sensation of strangury and it was dropped for one day. Information was given me that with that strangury there was a manifest diminution of the flow. I concluded that it was fair to infer that the organs in the pelvic regions were, in all probability, susceptible to the turpentine, and I recommended its use in smaller doses and added to it some camphor water. She continued to use the turpentine, and the flow continued to diminish; there was no longer any sensation of strangury after she had used the camphor-water in conjunction with it, and on Saturday last I was informed that the flow had ceased altogether. She called at my office and I found that the pulse, which had previously been 100, was reduced, to 80, and the peculiar sensation of palpitation which she had complained of as existing before was almost completely removed, and she was feeling in every way a good deal better. I heard from her again on Tuesday; she was then on her way to one of the suburbs, with the understanding that I should hear from her again to-morrow. I feel satisfied that the flow has not returned, otherwise I should have heard. In looking over the case in the first instance, I remembered that some of my brother ophthalmologists are curing everything, from epilepsy to corns, with glasses or tenotomy of the internal recti, and I examined the eyes to see if I could find anything of interest, but I could not see anything worthy of attention. I also examined the blood microscopically to see if there was any peculiarity there, but could find none. The use of the turpentine seems to have had the special advantages of securing at any rate, a temporary cessation of the hæmorrhage.

DR. A. REEVES JACKSON: The existence of fibroids as a probable cause in some of these cases, as suggested by Dr. Nelson, had occurred to me. The question of possible pregnancy also arose, and I made such inquiries and investigations as I hoped would lead to a settlement of the latter point especially. We know that in fibroid growths of the uterus hæmorrhage becomes by-and-by a prominent symptom, and usually it is the one which first calls the attention of the patient to her condition; and in these cases we usually have no trouble in the diagnosis where there is present either a polypus or a fibroid of sufficient size to alter the shape of the uterus or to be felt within the cavity of the organ. I can conceive how a very small fibroid, incapable of detection by ordinary methods and ordinary skilled hands and

fingers, might produce hæmorrhage, but would it yield to the medical treatment of a fibroid? If it did not, we should hardly feel justified in making a laparotomy to discover the existence of a fibroid that presented no other evidence of its existence than hæmorrhage. It is true that patients nowadays submit to laparotomy when urged to do so; yet the one who urges should have some kind of objective reason upon which to base his advice. In none of these cases could I detect any change whatever in the shape of the uterus. The fact is that when we find a fibroid as the cause of hæmorrhage it is already surgical. It is large enough sometimes to have existed, with their slow rate of growth, for many years, and yet hæmorrhage has probably not been present until the latest part of the history.

Disease of the Fallopian tubes I have no doubt is a frequent cause of persistent uterine hæmorrhage. Primarily, the blood may have its source in the tube; later, by overaction—by the mere bleeding—there is produced manifest disease of the endometrium, as in the case last cited. But, granting this, inasmuch as we can only reach the uterine lining anyhow by our topical treatment, even if we have a suspicion that there may be tubal disease, it does not aid us in deciding what to do for it. The ethics of the condition are in doubt.

Allusion has been made to the death of the third patient. She died of peritonitis following the operation. I have reported it in order to call attention to the danger of what is usually considered a simple and safe operation. In this case the operation was done under the strictest antiseptic precautions; every care was taken to avoid any danger from that source. Unfortunately, I was obliged to leave the city shortly after the operation, leaving the patient in an unsatisfactory condition, temperature 102°, rapid pulse, red cheeks, and evident high constitutional excitement. On my return I found her still worse, and shortly afterwards she died of peritonitis, whether septic or not I do not know. The dilatation was mechanical; was not made by tents, which I consider a dangerous method of treatment.

I did not mention in the paper an important fact in the subsequent history of the last case. It was this: During the last examination I detected a distinct swelling at the side of the uterus apparently in the Fallopian tube. Then I suggested that if the patient did not get better here was a reason why we might properly make a laparotomy —not for the hæmorrhage, but for the swelling which was possibly the cause of it. The curetting on three occasions certainly had a very satisfactory effect. On one occasion, for four months subsequent to the operation the patient had no bloody discharge whatever, natural or unnatural, which would seem to indicate that, at that time at least, the cause of the hæmorrhage was in the uterus, and that the effect of the remedies applied more thoroughly after the dilatation had a controlling influence for a long time. This is very satisfactory to a patient who has been having a profuse or prolonged hæmorrhage. This patient was under the care of excellent men in Canada who, so far as I know, never detected any swelling, and I infer from this fact that the latter symptoms were of comparatively recent appearance.

The nitric acid, which I applied in one case, I formerly used a great deal more than I do now. My method of using it is that recommended by Athill some years ago. The uterus is previously dilated, and when sufficiently open, the pure nitric acid is passed into the uterine cavity on an ordinary cotton-wrapped applicator. I place the patient on her back, introduce a perineal depressor, seize the anterior lip of the uterus, draw the organ down, and surround it entirely with cotton which has been dipped in a solution of bicarbonate of soda. The applicator is dipped into the acid, passed into the uterine cavity, and held there for a few minutes. It is then withdrawn and the vagina syringed until all fuming ceases. Then I remove the tampons from about the cervix, and another tampon saturated in glycerine is placed over the os uteri. Such was the method used in this case. The nitrate of silver I applied in this way: A few grains of the crystal are melted in the bottom of a test-tube. A silver uterine probe is dipped into the fluid and withdrawn a few times, until a bead is formed on the end of the instrument the size of a grain of rice. This is passed through a speculum up into the interior of the uterus and held there for a few minutes, and slowly drawn out so as to come in contact with the surrounding membrane. This method has been recommended as very effective in chronic cases of menorrhagia. The hydrastis I have used a good deal. Loewenthal has reported several cases in which he had used hydrastis for preventing menstruation absolutely in persons to whom it was injurious; chlorotic and anæmic patients, he affirms, have been effectually cured by the use of hydrastis, given so as to absolutely obliterate the function of menstruation. I have never used it for this purpose, but I believe in the principle. I do not believe menstruation, of itself, does any woman any good.

Prof. Earle asks about the relative frequency of inflammation before and after the advent of antiseptics. I am hardly prepared to answer that question. If the theory of septic inflammation is correct, all diseases resulting from the ordinary operations ought to be less if antiseptic precautions are used. I remember but three cases of ordinary operations in which death followed. Inflammation was present in all of them, and it may have been of a septic character, and so may it have been in this last case which I have related. But the patient complained of pain immediately after

the operation, and she was never free from pain until the time of her death, six days later.

Ergot I have not found to be beneficial in any condition of the uterus involving hæmorrhage, unless it be subinvolution during its soft stage where the uterus is large and heavy. In those cases I believe ergot is an excellent remedy. That condition was not present in any of these cases. Whether, in one of them, the cessation of menstruation for two months indicated pregnancy, I do not know, but there was no other evidence of it; there was no fœtus observed, nor was the history that of an early abortion, so that the single symptom of absent menstruation in a woman who was irregular at times was not so significant as it might be under other circumstances.

In the case stated by Dr. Parkes, the disease of the ovary was found, as I understand, after all other theories and much treatment had been exhausted, and it was supposed that there *might* be some disease *somewhere* in the pelvis which could only be detected and possibly removed by laparotomy. But it is doubtful whether this would be a safe rule to follow even when all technical means and all known remedies for persistent hæmorrhage have failed. If the woman is not endangered by the hæmorrhage would it be right to subject her to any risk of her life for a *possible* cure? If life were jeopardized there could, of course, be no question as to the propriety of laparotomy. This, however, was not the condition in any of the cases which I have related.

Dr. Addison H. Foster reported *A Case of Hydramnion.*

Dr. Edward B. Weston read a paper on *A New Procedure in Cases of Anticipated Complete Rupture of the Perineum.*

Dr. Bayard Holmes presented specimens of

CULTURES OF BACTERIA FROM THE URINE OF A CASE OF NEPHRITIS AFTER SCARLET FEVER.

The specimens are of such a character that, while they may not be in themselves particularly interesting, I hope they are of sufficient account, in connection with the paper I wish to present at the next meeting, to deserve a moment's attention. My paper is upon the subject of "Secondary Infection in Acute Infectious Diseases of Children." One of the diseases which I treat of is scarlet fever, and as the complication that is perhaps the most alarming and serious in scarlet fever is nephritis, I have taken a good deal of pains in studying the subject. Through the kindness of a neighbor physician I had a chance to examine the urine of a case of nephritis after scarlatina, and to make a few cultures from it. On the first day that any symptom of nephritis was noticed there was a very large amount of blood in the urine, and I took pains to collect some of it in a perfectly sterilized flask after the first part had passed away, so as to get it in as nearly a sterile condition as possible. I took it home and planted the sediment in a few tubes of gelatin. The gelatin in a very short time showed small colonies growing along the track of the needle. From isolated colonies, the second series of tubes was planted, and they begin to show a characteristic growth. Only one of the first series of six tubes remains sterile, and only two of them show any signs of mixed infection. The remaining three tubes are evidently pure cultures of the *Streptococcus pyogenes* of Rosenbach. This is the microbe that produces the enlargement of the cervical lymphatics early in scarlet fever. I present these specimens because they are short-lived, and in the hope that I may be afforded the opportunity of examining, under favorable circumstances, the urine of a few boys suffering from this complication.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR REGULAR CORRESPONDENT.)

Value of Strophanthus and Digitalis—Sulfonal and Chloral—Cardiac Ectopia—Pathogenesis and Treatment of Tetanus—Menstruation after Removal of the Ovaries.

The results from a long discussion that has been going on at the Academy of Medicine on the therapeutic value of strophanthus, digitalis and other cardiac remedies seem to show that, as regards strophanthus, its effects are analogous to those of digitalis. Professor Germain Sée prefers to the preparations made with the entire plant the active element of those plants, such as the alkaloids, the glucosides and the salts which are of a definite form and will always, in the same dose, produce identical effects. He therefore prefers strophanthin to strophanthus, and digitaline to digitalis, and as regards their action on the heart he showed that strophanthus determines only a feeble diuresis, and that it acts but little on the dyspnœa of affections of the heart. There are three or four other cardiac medicaments each of which responds to a particular indication. If the physician wishes to act directly on the heart, he may choose between digitalis, the salts of potash, sparteine and strophanthus, but digitalis should be preferred, as it is the most diuretic. Dr. Laborde, Chef of the Laboratory of the Faculty of Medicine, after a series of experiments conducted by him, demonstrated the superiority of the active elements, glucosides or alkaloids, over the entire plant. The former, in medicine, he said, represented progress, the latter represented routine. In employing substances chemically defined, the physician substitutes the formula to the receipt, as expressed by Dumas. He studied various pharmaceutical prep-

arations and found enormous differences in the proportion of the active substance contained in tinctures and extracts. He therefore agrees with Professor Sée that strophanthin should be preferred to strophanthus, and digitaline to digitalis. As regards the physiological properties of these drugs, Dr. Laborde submitted to the Academy sphygmographic tracings which showed that strophanthin augments the force of the heart with a very great rapidity and intensity, but causing at the same time very irregular pulsations. On the contrary, digitalis acts more slowly, but it produces pulsations of the heart very regular, sparteine occupying an intermediate position between digitaline and strophanthin.

At a recent meeting of the Société de Therapeutique, Dr. Huchard raised the question as to the superiority of sulfonal over chloral as a hypnotic. He said he had tried the remedy in cases of phthitis, cardiac affections, subacute articular rheumatism, neuralgia, etc., in which the patients were worn by sleepless nights, but with the most complete non-success. If the German physicians had obtained more favorable results, it was because they generally prescribed it in cases of nervous insomnia. He therefore believes that it is in these conditions particularly that the drug would most frequently succeed. He moreover found that, on the one hand, the sleep produced by sulfonal may be prolonged a much longer time than would be desired. He had seen a patient that had taken the drug sleep for nearly two days. On the other hand, if it determine sometimes a calm sleep, at others it causes dreams, nightmares. Frequently, on awaking, the patient complains of great fatigue, extreme lassitude accompanied with giddiness, or even a certain degree of titubation which resembles that of a man in a state of intoxication. Dr. Huchard does not believe sulfonal to be superior to chloral, its only advantage being that it possesses a prolonged action.

At the Société Médicale des Hôpitaux Dr. Huchard presented a patient, æt. 52 years, affected with a cardiac ectopia characterized by an epigastric tumor, ovoid in shape, painless, in which distinct pulsations are felt. The sphygmographic tracings of these pulsations are the normal cardiographic tracings. The heart does not beat at its normal position, but at the level of this tumor.

In the *Bulletin Générale de Thérapeutique*, Dr. Guelpa published a note on the pathogeny and treatment of tetanus, and gives as the result of a series of experimental observations the following conclusions: 1. That tetanus is an infectious disease. 2. That although the horse is most liable to the disease, it is not of equine origin. The evidence points, though not conclusively, to a telluric origin, and in any case it is certainly due to the presence of microbes. 3. The symptoms are not due to the presence of the microbes themselves, but to the poisonous effect of their secretions. 4. The first manifestations are limited to the seat of injury, it is only in later stages, and even then very rarely, that the microbes invade the organism as a whole. 5. The treatment should be directed to the destruction of the site of the bacillary infection, to the elimination of the products of bacillary activity, and to calming the nervous system. The first indication is fulfilled by incisions and scraping and free removal of tissue, washing out the wounds with a 5 to 10 per 1,000 solution of corrosive sublimate, or preferably cauterizing them with nitric or sulphuric acid. Elimination is produced by stimulating the excretory organs by means of purgatives, diuretics and diaphoretics, and giving chloral to procure rest.

At the Société de Chirurgie, Dr. Monod lately communicated a note from Dr. Macario, of Nice, on the persistence of the menses after the ablation of the ovaries. The note referred to a woman who had been operated on by Lawson Tait, who was summoned thither for the purpose. This case recalls those related by Drs. Terrillon and Quenu at previous meetings of the Society. A. B.

DOMESTIC CORRESPONDENCE.

Spinal Injuries from Railroad Accidents.

Dear Sir:—I have read the article of Drs. Burry and Andrews relating to spinal injuries and have also read the criticism thereon by Dr. S. V. Clevenger, entitled "Spinal Concussion." Will Dr. Clevenger explain why it is that about twelve out of fifteen cases of alleged spinal injury from railroad accidents; falling on sidewalks, or factory accidents; or any accident where a corporation may be sued, get well after the claim has been settled or a jury has found a large verdict in their favor? Is it true that because courts permit such verdicts to stand, it is satisfactory proof that the injury existed? The lawyers tell us that juries are judges of the fact, and that the courts will approve verdicts if there has been no legal error in the trial. That large verdicts are given can hardly be accepted by intelligent surgeons as positive proof that the claimant was suffering from injury. I have seen, and had under my charge, during the past twenty years, very many cases of this class—and, my experience and observation justify me in stating that any honest case of railroad injury, sidewalk, or mill injury, can always be fairly adjusted without the aid of courts, lawyers, or "spine doctors." The cases of excessive amounts railroads have been forced to pay, cited by Drs. Burry and Andrews cover but a small portion of the amounts railroad companies pay out of court, through fear of a greater robbing in court through the aid of doctors who on vague theories of concussion of the spinal

cord. The lawyers who operate in such cases know the surgeons who will join them in a railroad or corporation suit—and they certainly are as numerous as abortionists. Corporations often submit to blachmail to avoid legalized robbery.

If any one having any interest in this subject and desirous to know the truth, will keep track of all these cases after settlement is made or judgment paid, he will learn that twelve out of fifteen rapidly recover—often so rapidly as to alarm the "calamity lawyer" and the "concussion doctor" who aided at recovering the "swag." That is twelve out of fifteen of these spinal cases are pure fraud and malingering. And I further assert that if a surgeon is honest, and not too ignorant, he can detect and expose nine out of ten cases when symptoms are simulated. I can refer to a case of a strong healthy man, now firing in Missouri, who received a large sum from a railroad company because two or three reputable back-bone doctors said it was impossible that he could ever walk again. This is not a rare case. I can refer to other cases where friends who honestly sympathize with the "poor cripple" on the witness stand trying to get his rights from a "soulless corporation," became, after judgment was paid, acquainted with the fraud and convinced that their sympathy led them into error, that the "cripple" with the damage money in his pocket had to emigrate to escape the indignation of former friends.

The writer, over a year or two ago, was called as a witness in a case where a man sued a railroad company for alleged injuries he claimed to have received in stepping off an unprotected station platform. Three or four surgeons testified that nothing whatever ailed the man except rheumatism, with which disease he admitted he had been suffering for years, other surgeons testified that if the symptoms and pain existed as stated by the claimant, he was suffering from concussion of the spinal cord. Of course it could not be shown that the symptoms did not exist as claimed—and the law presuming every one to be honest—there was some testimony upon which to found a verdict, and the eager jury promptly found a verdict against the railroad company. The Judge expressed himself as believing the verdict unjust, but as there was testimony upon which to base it and no material error on the trial, he followed the "rules of practice," as he said, and rendered judgment. The smart lawyer put $1,000 in his pocket, the claimant pocketed $2,500 and chuckled over the success of the scheme. This same spine got well within two months, and the surgeons who testified that recovery was impossible admit their error, but that does not remedy the wrong done by their aid. Railroad surgeons ought to be given credit for as much honesty as others, and if the public knew how many cases of injury are settled out of court upon the advice of railroad surgeons, I think their honesty and fairness would be admitted. The railroad spine, sidewalk injury and malpractice charges are all alike; and in all these cases it is a disgrace to the medical profession that there are doctors in every community ready to become partisan and go into court to support malingerers, there may be two reasons for this, ignorance and personal pride, and before juries the testimony of one doctor is as good as another. These fraudulent cases are brought only against corporations, thus making the general prejudice against all corporations available to aid the careless ignorant testimony of "experts." I have never seen, nor do I ever expect to see, an honest case of "railroad spine" or sidewalk injury in court upon the question of whether or not an injury was sustained, where there is actual injury of any material consequence there is a controversy upon that point, but all physicians agree. The railroad companies and all the large corporations employ the best medical and legal talent and abide by their decisions, be they adverse or favorable to them.

That unjust verdicts are rendered by juries, and courts compelled to sustain them because there was some testimony to support them, is perhaps as much the fault of our profession as of the ability of unscrupulous lawyers to use the law and insure prejudice against corporations to accomplish *legal* robbery. And yet "medical colleges" proceed with the work of selling the degree of M.D. for a cash consideration only.

H. JUDD, M.D.

Galesburg, Ill.

BOOK REVIEWS.

ANNUAL REPORT OF THE SUPERVISING SURGEON-GENERAL OF THE MARINE-HOSPITAL SERVICE of the United States for the Fiscal Year 1888. 8vo, pp. 406. Washington: Government Printing Office. 1888.

This Report opens with some statistical statements in regard to relief furnished by the Marine-Hospital Service, followed by several pages of circular matter in regard to quarantine service. The arrangements for maritime quarantine are now said to be very good. Two dozen pages are devoted to a consideration of the late epidemic of yellow fever in Florida, and one dozen pages to the late National Board of Health, and to propositions that have been made to rehabilitate that organization. The National Board of Health being practically extinct, and being and having been in no way connected with the Marine-Hospital Service, it may be asked why a dozen pages should be printed in this Report, apparently for the purpose of laying a ghost. If so many words are required to prove that a deceased body

is deceased, and should remain in that condition, one has grave doubts as to the validity of the arguments used, especially when they are characterized by warmth rather than moderation.

There are some papers in this Report that make it one of unusual interest. Dr. John Guitéras writes a very valuable paper on "Some Observations on the Natural History of Epidemics of Yellow Fever, based on a Study of the Mortality Statistics of the City of Key West; also a Plea in Favor of a continued Investigation of this Disease by the Government of the United States." This is one of the most valuable of the many excellent contributions Dr. Guitéras has made to American medical literature. The Report includes also three contributions to the subject of the "Food Supply of Seamen," by Dr. P. H. Bailhache, Henry W. Sawtelle, and Chas. B. Goldsborough. Dr. Sawtelle's contribution includes a report of scurvy treated at San Francisco during the seventeen years ending June 30, 1888.

Among the "selected cases from hospital practice," are some interesting reports. Surgeon W. H. Long reports fourteen operations for the radical cure of hernia. Apparent permanent cure was obtained in thirteen cases. Drainage tubes and antiseptic dressings were used in all these cases. "The danger to life seems very small, there being not even an expected amount of constitutional disturbance."

Dr. Long reports also a case of ankylosis of lower jaw relieved by making a false joint. A diagram of the operation is given. The patient was discharged cured in twenty-two days, with a joint that worked perfectly, and with the ability to masticate all kinds of food.

Dr. Long's third report is on a case of œdema glottidis, with apparent death, relieved by laryngotomy. Under this report is a note on a case of death from œdema glottidis due to quinsy, making the second case of œdema of the glottis from quinsy at the Marine-Hospital at Detroit in one year.

Surgeon Henry W. Sawtelle reports three cases. The first was one of reamputation of the left leg at the superior third for ulcer and neuralgia of the stump; complicated by pneumonia and pyæmia; followed by recovery. The second case was one of cerebral hæmorrhage, with right hemiplegia and aphasia, from multiple injury. After several operations for the relief of pressure, the patient recovered. The third case was one of compound comminuted fracture of both bones of the left leg, with lacerated wound of the face.

Passed Assistant Surgeon W. A. Wheeler reports a case of lacerated wound of the knee, with rupture of the internal lateral ligament. The patient recovered with a fairly good knee.

Passed Assistant Surgeon Charles E. Banks has some valuable statistical material in regard to syphilis, pneumonia, and typhoid fever. In regard to syphilis, from 1877 to 1885, inclusive, the Marine-Hospital service treated 45,118 cases of syphilis, of which 20,415 were of the primary lesion, and 24,073 of the secondary type. Of the 20,415 primary cases, 3,637 were classified as hard chancre, equivalent to 17.8 per cent., and 16,778, or 82.2 per cent., were soft chancres; thus making the proportion of hard to soft chancres a little less than 1 to 5. Puché, whose statistics were based on 10,000 chancres, found 1 indurated to 4 simple chancres. The tables given show a grand ratio of 14,8 cases of syphilis, primary and secondary, to the hundred of all classes treated.

In regard to pneumonia, the reports of the service since 1872, exclusive of three years, show a total of 3,011 cases, and 496 deaths, on a mortality of 16 per cent. The records of the service since 1872, except three years, show a total of 2,503 cases of typhoid fever, and 374 deaths or 14.9 per cent.

Passed Assistant Surgeon S. T. Armstrong reports six cases. The first case was one in which necrosed bone was removed from the tibia and clavicle, the necrosed portions having been present for many years without causing irritation.

Dr. Armstrong's second case was one of malformation of the hand, in which an unsuccessful operation was made for the separation of webbed fingers. His third case was one of fracture of the ischium, with recovery. The fourth case was one of pyæmia consequent upon a wound of the toe, with death, illustrating the necessity of antisepsis. Dr. Armstrong reports also a case of cure of bunion by resecting the first metatarsal bone. His final contribution to the Report is a case of excision of the tunica vaginalis for the cure of hydrocele.

Passed Assistant Surgeon P. C. Kalloch reports a very interesting case of recovery from sacculated aneurism of the abdominal aorta.

Passed Assistant Surgeon P. M. Carrington reports a case of recovery after rupture of the quadriceps extensor femoris.

Two interesting cases of enteric fever are reported by Assistant Surgeon F. C. Heath, and Acting Assistant Surgeon T. M. Holmes, of Rome, Ga., reports a case of multiple neuritis.

The volume closes with a series of reports of fatal cases, with autopsies.

DR. KARL FRIEDRICH WERNER NASSE, head physician of the Rhenish Provincial Lunatic Asylum and honorary professor in the University of Bonn, has just died at Bonn. He was the author of "Proposals for Legislation for the Treatment of the Insane, with special reference to Prussia," and of numerous essays on Diseases of the Mind in the medical periodicals of Rhenish Prussia.

MISCELLANY.

THE ILLINOIS DENTIST.—The Dental Society, of Chicago, through C. Stoddard Smith, Chairman of a Special Committee, has formulated a bill, to which the approval of members in solicited, with the intention of at once presenting it to the Legislature. It provides for the appointment by the Governor of a Board of Examiners, five in number, and for the examination and registration of all dentists. The Board is to be supported by the fees for registration and examination, the latter being $10 and a license fee $5, while the registration fee is $1. Penalties of $25 to $50 for the first offense, $50 to $100 for the second, and not less than $100 nor more than $250 for the third are provided, each operation to constitute a separate offense and one-half the penalty to go to the Board and the other to the school fund. It also provides that all dentists holding the certificate of the Board shall be exempt from jury service.—*Chicago Times.*

DR. WILLIAM GILMAN BRECK, of Springfield, Mass., died suddenly, of apoplexy, on January, 23, 1889. He was born in Franklin Co., Vt., on November 14, 1818. He was senior surgeon of the Springfield Hospital, had been President of the Hampden Co. Medical Society, and was a member of the American Medical Association.

DR. E. B. BRANDT, of Mechanicsburgh, Pa., died on January 16, 1889, aged 60 years. He was one of the most prominent physicians in Southern Pennsylvania. He was graduated from Jefferson Medical College in 1845. He became a member of the American Medical Association in 1872.

THE *Dominion Dental Journal*, the first number of which has just appeared, is edited by W. George Beers, L.D.S., of Montreal, the co-editors being C. S. Chittenden, L.D.S., of Hamilton, Ont., and A. C. Cogswell, L.D.S., of Halifax, N. S. It is a monthly journal of 48 pages.

PROLONGED GESTATION.—Dr. W. H. Murray (Galashiels) writes: Mrs. S., aged 25, married five years, no family, consulted an Edinburgh gynecologist in January, 1888, and was told by him that her ovaries were diseased, and that she had better go to the hospital for treatment. Preferring to remain at home, she asked me to attend her. Rest in bed and the hot douche was all the treatment employed, my attendance ceasing on February 4th. On March 24th Mrs. S. stated to me that she had menstruated on February 12th, but she had not seen anything since. She complained of morning sickness and a feeling of *malaise*. The nipples were prominent, and there was a distinct areola around them, with enlarged mamillæ. I gave it as my opinion that she was pregnant and that, in all probability, it dated back to her last menstruation on February 12th. I heard nothing further of my patient until November 28th, when she sent for me, thinking she was in labor. Both the patient and nurse declared that she was having regular pains, recurring every ten minutes. On making a vaginal examination I could find no evidence of labor having set in, nor did I find any improvement on a subsequent visit in the afternoon, although she still declared she felt pains at regular intervals. A dose of opium and an assurance from me that the pains were not the right kind had the effect of settling the pains and putting her mind at rest. I called on the following day, and found my patient busy with her household duties and quite comfortable. On the afternoon of January 11th unmistakable labor pains set in, and by 9 P.M. the cervix was dilated to the size of a sixpence. Progress was slow, due to the presentation being occipito-posterior and the head a big one. The cervix was not half dilated by 8 P.M. on January 12th, though the membranes were still unruptured. Finding her strength becoming exhausted and no progress being made, I delivered with forceps. Unfortunately the infant (stillborn) was not weighed until the following day, when it scaled 7½ pounds and measures 19½ inches in length and 15½ inches round the shoulders.

The interest of the case lies in the length of the pregnancy. Did the woman become pregnant after her period, beginning February 12th, 1888, the verdict I gave on March 24th? If so, the period of gestation was eleven months almost. Allowing five days would bring the date of expected birth to November 19th, but instead it occurred on January 12th, 1889, or 330 days. Suppose the pregnancy took place before the next period, which would have occurred on March 12th, is it at all likely that I could have found such pronounced symptoms of pregnancy as I did on March 24th? Even admitting that the pregnancy did occur in March, still she carried the child *in utero* until January 12th following, that is to say, 294 days after I had pronounced her pregnant. In my own mind I am quite satisfied that this woman became pregnant after her February period, beginning on February 12th and ending on February 17th, so that she actually carried the child 330 days. In Taylor's *Medical Jurisprudence* I find that 330 days is the longest on record, and in none of the cases therein mentioned are the facts so clear as in this case of mine.

The dates I have taken from my daily visiting list and are absolutely correct. Dr. Burnett, who has acted as my assistant for the last eighteen months and who also saw the woman on March 24th, can verify every date given.—*British Medical Journal.*

HEALTH IN MICHIGAN, JANUARY, 1888.—For the month of January, 1889, compared with the preceding month the reports indicate that scarlet fever and neuralgia increased in prevalence.

Compared with the preceding month the temperature in the month of January, 1889, was slightly lower, the absolute humidity was slightly less, the relative humidity was slightly more, and the day and night ozone were less.

Compared with the average of the month of January in the three years, 1886–88, intermittent fever, consumption of lungs, inflammation of kidney, and pneumonia were less prevalent in January 1889.

For the month of January, 1889, compared with the average of corresponding months in the three years 1886–'88, the temperature was much higher, the absolute humidity was more, the relative humidity was less, the day ozone and the night ozone were more.

Including reports by regular observers and others, diphtheria was reported present in Michigan in the month of January, 1889, at sixty places, scarlet fever at ninety-four places, typhoid fever at thirty-eight places, measles at eleven places, and small-pox at eleven places.

Reports from all sources show diphtheria at eight places more, scarlet fever at thirty-seven places more, typhoid fever at eight places more, measles at seven places more, and small-pox at five places more in the month of January, 1889, than in the preceding month.

A part of the increased prevalence of communicable diseases is doubtless only apparent, because a knowledge of a large number of outbreaks not otherwise reported, was obtained from the annual reports of health officers and clerks sent to this office during the month of January.

THE TOOTH IN THE APPLE.—Chandler Jones, a negro, is in jail for a burglary on Mr. Milton's store in Hazelhurst. The circumstances of his detection are peculiar, and the work was done by Detective E. A. Wilson, who had found nothing in the way of a clue except an apple, out of which two bites had been taken. He at once noticed that the two front teeth of the biter were not only irregular, but peculiar. He imagined that when the biter was a boy an old tooth remaining in the gum caused a new tooth to grow one-sided. The apple was placed in water so as to prevent shrivelling, and, keeping his secret

to himself, Wilson went down to Baxley, where he knew a number of loafing negroes.

Walking into a store, he bought some apples, and biting one, said to a well-dressed negro who had attracted his attention: "Try one." The negro accepted the gift, and when he raised the apple to his mouth for a second bite the handcuffs were placed on his wrists. There never was a more astonished negro. He was under arrest so quickly that he was unable to offer any resistance. He gave his name as Chandler Jones, and was found to be wearing a suit of clothes and a watch and chain taken from Mr. Milton. Jones was taken to the store, where he showed how he obtained entrance on the night of the burglary, and how the first thing he saw was a barrel of apples. He picked up one, and after two bites laid it down on Mr. Milton's desk.—*Macon Telegraph* (Ga.).

PAMPHLETS RECEIVED.

Heitzmann, Carl, M.D., and Bödecker, C. F. W., D.D.S., M.D.S. *Contributions to the History of the Development of the Teeth.* Reprint from the Independent Practitioner.

Rohé, George H., M.D., Baltimore, Md. *Diseases of the Skin Associated with Disorders of the Female Sexual Organs.* Reprint from the Buffalo Medical and Surgical Journal, February, 1889.

Rohé, George H., M.D., Baltimore, Md. *On Corpulence, especially its Treatment by a Pure Milk Diet.* Reprint from Maryland Medical Journal.

Kellogg, J. H., M.D., Battle Creek, Mich. *Experimental Researches Respecting the Relation of Dress to Pelvic Diseases of Women.* Reprint from the Transactions of the Michigan State Medical Society, 1888.

Cuddy, J. W. C., A.M., M.D., Baltimore, Md. *Some Phases of the Civil Law in Relation to the Development of Man.* Reprint from Gaillard's Medical Journal.

Fry, Frank R., A.M., M.D., St. Louis, Mo. *A Clinical Study of Alcoholic Neuritis.* Reprint from St. Louis Courier of Medicine.

Canfield, William B., A.M., M.D., Baltimore, Md. *Report of the Section on Microscopy, Micro-chemistry and Spectral Analysis on the Microscopical Examination of Urinary Sediment.* Reprint from Transactions of Medical and Chirurgical Faculty of the State of Maryland, 1888.

Canfield, William Buckingham, A.M., M.D., Baltimore, Md. *The Gonococcus.* Reprint from the Microscope.

Mercer, A. Clifford, M.D., F.R.M.S., Syracuse, N. Y. *A Method of Using with Ease Objectives of Shortest Working Distance in the Clinical Study of Bacteria.* Reprint from the Microscope.

Michigan State Board of Health. *Prevention and Restriction of Small-Pox.* Reprint from the Annual Report of the Board for 1888.

Hewitt, Charles N., M.D., Red Wing, Minn. *Public Health a Public Duty. The Organization, Powers, and Relations of Local, State, and National Boards of Health.* The President's Address at the Sixteenth Annual Meeting of the American Public Health Association, Milwaukee, Wis.

Report of the Committee on the *Pollution of Water Supplies* appointed by the American Public Health Association. Read at the Annual Meeting at Milwaukee, Wis.

Carpenter, A. B., M.D., Cleveland, O. *Report on Progress in Gynecology.*

LETTERS RECEIVED.

J. M. Bessey, M.D., Toledo, O.; H. H. Peachy, M.D., Loveland, O.; Thos. F. Goode, Buffalo Lithia Springs, Va.; Parke, Davis & Co., Detroit, Mich.; Battle & Co. Chemists Corporation, St. Louis, Mo.; James H. Buckner, M.D., Cincinnati, O.; Chas. W. Hitchcock, M.D., Detroit, Mich.; J. M. Bell, M.D., Murphy, N. C.; Lambert Pharmacal Co., St. Louis, Mo.; W. P. Cleary, New York; Jacob L. Williams, M.D., Boston, Mass.; W. B. Atkinson, M.D., Philadelphia, Pa.; Bouché Fils & Co., New York; R. Melms, M.D., Chicago; St. v. Martinitz, M.D., Cedar Rapids, Ia.; Fairchild Bros. & Foster, New York; Codman & Shurtleff, Boston, Mass.; Wm. Pepper, M.D., Philadelphia, Pa.; T. J. Kane, M.D., Paterson, N. J.; G. E. Francis, M.D., Worcester, Mass.; A. F. Sampson, M.D., Galveston, Tex.; G. N. Seidlitz, M.D., Keokuk, Ia.; R. S. Anderson, M.D., Grove City, Ill.; W. D. McGowan, M.D., Ligonier, Pa.; Wm. Manlius Smith, M.D., Syracuse, N. Y.; National Surgical Institute, Atlanta, Ga.; National Architects' Union, Philadelphia, Pa.; Ohio Buggy Co., Columbus, O.; J. J. Conner, M.D., Pana, Ill.; W. P. Cleary, New York; Dr. Sauerhering, New York; A. A. Marks, New York; A. L. Justice, M.D., El Paso, Tex.; McL. Miller, M.D., Oconomowoc, Wis.; Rumford Chemical Works, Providence, R. I.; Dr. Woodruff, London, Ont.; Overman Wheel Co., Boston, Mass.; J. H. Eskridge, M.D., Chicago; T. M. Talbot, M.D., Columbus, O.; Beatrice Pearce, M.D., Waukegan, Ill.; Charles T. Parkes, M.D., Chicago; S. Solis-Cohen, M.D., Philadelphia; E. R. Williard, M.D., Tiffin, O.; Hal. C. Wyman, M.D., Detroit, Mich.; J. W. Unger, M.D., West Point, Miss.; W. C. Jones, M.D., Grass Valley, Col.; Wm. B. DeWees, M.D., Salina, Kas.; E. H. Dudley, M.D., Shell Rock, Ia.; E. F. Brush, M.D., Mt. Vernon, N. Y.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from February 9, 1889, to February 15, 1889.

The Medical Director will proceed to Ft. Buford, Dak., on public business connected with the Medical Department, and upon completion of duty will rejoin his station. Par. 8, S. O. 14, Hdqrs. Dept. of Dak., St. Paul, Minn., February 5, 1889.

Major Leonard W. Loring, Surgeon, leave of absence on surgeon's certificate of disability granted in S. O. 6, A. G. O., Dept. of Ariz., January 18, 1889, is extended six months on account of disability, by direction of the Secretary of War. Par. 23, S. O. 35, A. G. O., Washington, February 11, 1889.

Capt. Edgar A. Mearns, Asst. Surgeon, is relieved from temporary duty at Ft. Pembina, Dak., and will rejoin his station, Ft. Snelling, Minn., without delay. Par. 4, S. O. 14, Hdqrs. Dept. of Dak., St. Paul, Minn., February 5, 1889.

Capt. Henry S. Kilbourne, Asst. Surgeon, having complied with par. 2, S. O. 6, Dept. of the Columbia, will return to his station, Vancouver Bks., W. T. Par. 1, S. O. 9, Hdqrs. Div. of the Pacific, San Francisco, Cal., February 2, 1889.

By direction of the Secretary of War, Capt. Robert W. Shufeldt, Asst. Surgeon, having appeared before the Army Retiring Board at Ft. Leavenworth, Kan., in compliance with paragraph 1, S. O. 4, January 5, 1889, from this office, will repair to this city to await action on the proceedings in his case. Par. 12, S. O. 32, A. G. O., Washington, D. C., February 7, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending February 16, 1889.

Surgeon D. N. Bertolette, detached from the "Thetis" and wait orders.

P. A. Surgeon L. G. Henneberge, detached from "Minnesota" and to the "Thetis."

Surgeon R. A. Marmion, detached from "Juniata" and wait orders.

Asst. Surgeon F. N. Ogden, detached from "Juniata" and wait orders.

Asst. Surgeon Chas. F. Stokes, ordered to the "Minnesota."

Asst. Surgeon Geo. B. Wilson, ordered to the Navy Yard, Mare Island, Cal.